Ontario

Ministry of
Colleges and
Universities

ONTARIO OPERATING FORMULA MANUAL

DESCRIBING THE ONTARIO OPERATING GRANTS

FORMULA AS REVISED AND AMENDED

TO NOVEMBER, 1982

UNIVERSITY RELATIONS BRANCH
MINISTRY OF COLLEGES AND UNIVERSITIES
TORONTO, ONTARIO

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FOREWORD

Although, in case of conflict, rulings and interpretations in this manual take precedence of those contained in any other document referred to by this manual, any such conflicts should be brought to the attention of the Assistant Deputy Minister, University Affairs Division, Ministry of Colleges and Universities.

I GENERAL

1. HISTORICAL BACKGROUND TO THE INTRODUCTION OF THE FORMULA

The idea of devising an objective mechanism to allocate operating grants to Ontario universities was deliberated for many years. A strong endorsement of this principle came from the 1965 Bladen Commission report on the financing of higher education, with the result that the Ontario Operating Grants Formula was given final approval in November 1966, in time for the calculation of the 1967-68 grants.

A Subcommittee on Finance, organized by the Committee on University Affairs, the government's advisory body, worked closely with a Subcommittee of the Committee of Presidents of Ontario Universities to reach general agreement with regard to the general principles surrounding the type and construction of the recommended formula, the categorization and weighting of various programs, and the methods of its operation. Detailed recommendations were then discussed with the Committee of Presidents who expressed accord with them, subject only to a concern for continuing review.

2. THE PURPOSE OF THE FORMULA

The purpose of a formula is to provide an objective mechanism for determining the share of the Provincial operating grant to be allocated to each university. It is frequently pointed out that universities are spending institutions and that there is virtually no upper limit to what they can spend on improved teaching, more extensive research and the facilities which these functions involve. These comments are made to emphasize that, although a formula will ensure

a reasonable degree of equity in the distribution of monies, it will not, in itself, ensure an adequate level of support.

It should also be noted that the kind of formula described here is not intended to limit or control the expenditure of funds granted to the universities, but merely to determine for each university an amount comprised of the formula grant and fee income, out of which may be paid any eligible university operating expenditures, i.e. all operating expenditures except those -

(a) in connection with assisted/sponsored research,
(b) for principal and interest payments on capital indebtedness,
(c) for student aid,
(d) for ancillary exterprises,
(e) for capital projects.

Many kinds of formulae, some of them highly involved and complicated, have been devised in other jurisdictions. In Ontario the formula adopted reflects a concern for continuing university autonomy in the internal management of university affairs. Consistent with this concern, a relatively simple pattern of weighted enrolment has been adopted, but without sacrificing the objective of a reasonable degree of equity in grants distribution.

3. The Advantages of a Formula

The Formula

3.1 buttresses the independence of universities by ensuring a basic income to each institution without the close scrutiny of operating budgets necessarily involved in subjective review.

3.2 provides a more certain basis for university planning and gives universities maximum incentive and flexibility for effective management.

For the universities, these advantages are obvious and compelling. From the standpoint of the Government, the formula provides similar attractions.

3.3 obviates the necessity for detailed scrutiny of university operating budgets. The granting body can thus turn more of its attention and energy to more important matters such as the overall level of support, the co-ordination of long-range planning, and the impact of predicted enrolment patterns in the future.

3.4 provides, and is seen to provide, a reasonable degree of equity in grants distribution.

3.5 ensures private donors that gifts will be an added resource of the university and not a substitute for public support. It is understood that the government cannot be expected to assume responsibility for additional requirements created by short-term unendowed private funding should that funding lapse.

4. Difficulties and Objections

4.1 A formula such as this is not a panacea for all the problems which arise in the relations between universities and the Government. Most of the possible objections to the formula idea have to do not with its objectives but with probable inadequacies of the formula in achieving its objectives. Extra-formula grants of various types have been and will continue to be provided for exceptional circumstances not allowed for in the design of the formula.

4.2 It has been said that a mechanical system of distributing grants would produce mediocrity and/or uniformity in all universities. This could be a danger only if the level of government support were not high enough to maintain quality or if the individual institutions failed to use their grant support with sufficient imagination or if the formula were such as to discourage would-be donors from giving private support for special projects and special areas of excellence. (Because private endowment is not reflected in the grant calculation, the amount of government support is not affected by the amount of private endowment.)

4.3 It should be understood that the formula does not attempt to achieve an equitable distribution of total income. Rather it aims only to ensure a reasonable distribution of government funds. To the extent institutions are able to obtain extra funding the total income may be more or less equitably distributed among the institutions, according to their varying degrees of success in obtaining extra funding. The formula aims at a reasonably equitable distribution, not of total institutional income, but of that (preponderant) portion of it whose source is formula grants and fees.

4.4 In spite of the difficulties and objections noted above, the prevailing view seems to be that the formula has been successful in achieving this aim.

5. Extra-Formula Grants

Certain institutions have financially significant atypical characteristics that could not be allowed for in a formula designed to be simple. In those cases, formula grants need to be supplemented by extra-formula grants, determined on the basis of judgement. The latter have accounted for only 2 to 3% of total operating grants in recent years, the bulk of which has gone towards the incremental costs of bilingualism at institutions using both French and English (bilingualism grants), additional costs associated with Northern location (Northern Ontario grants) and extra funding for small-enrolment institutions (supplementary grants). In 1981-82, a new category of extra-formula funding called differentiation grants was introduced to assist institutions which have identified their strengths and accepted a clearly differentiated role based on them, to pursue them efficiently and effectively.

With respect to teacher education, Ministry policy has been that for the first four years after transfer to the universities support towards university teacher education programs formerly operated by the Ministry of Education should be provided on the basis of a review of their operating budgets: i.e. should include an extra-formula grant, where necessary, to supplement the formula funding generated by teacher education enrolment.

6. Tuition Fees

6.1 There are four main reasons why formula (standard) fees are included in the operating formula:

(1) In setting its own support levels the government has to consider the basic

operating income of the institutions, of which fees are a part.

(2) For reasons of both policy and accountability, a definition is needed (pg. 2) of the uses to which basic operating income (including fees) can be put.

(3) Tuition fee levels are an aspect of an important government concern: the question of accessibility.

(4) The inclusion of formula fees provides a ready basis for assessing the impact of changes in fees upon the government's student assistance program.

6.2 Through their governing Acts, Ontario universities have full legal authority to establish their own fee levels. While these need not be, and in many instances, have not been, identical with the formula fees used in formula grant calculations, the universities have co-operated with the government by keeping actual fees on the whole fairly close to formula fees.

6.3 In order to give some definition to this previously unwritten understanding, and to encourage greater flexibility in fee-setting, the government introduced a provision in 1980-81 allowing additional discretionary fee increases of up to 10% above formula fees without reduction in operating grant. Not being part of basic operating income, the proceeds from additional discretionary fee increases may be used for expenditures other than eligible operating expenditures.

1982-83 FORMULA FEES

UNDERGRADUATE (2-Term Fee)

Group 1: Formula Fee = $630
Technology (Lakehead)

Group 2: Formula Fee = $690
Ryerson

Group 3: Formula Fee = $774
Ontario College of Art

Group 4: Formula Fee = $812
Dental Technology Nursing Technology Theology

Group 5: Formula Fee = $954
Agriculture Arts & Science-Toronto Arts & Science (1st yr) - Trent Arts, General & 1st yr Honours Arts, Upper Yrs. Honours Commerce & Business Adm. Conversion Engineering - Lakehead Dip. Public Health Nursing Education Environmental Studies Fine & Applied Arts Forestry Household & Food Science Journalism Law Library Science Music Nursing Pharmacy Physical & Health Education Physio & Occupational Therapy Preliminary Year Pre-Medicine Secretarial Science Science General & 1st Yr. Honours Science Upper Yr. Honours Social Work, 1st Yr. Social Work, Upper Years Veterinary Medicine

GROUP 6: Formula Fee = $1,036
Architecture Engineering Landscape Architecture Industrial Design Optometry

GROUP 7: Formula Fee = 1,214
Dentistry Medicine

Non- exempt Foreign Students:

Reg'd in an Ontario university program before Sept. 1/82	$1990
Not reg'd in an Ontario university program before Sept. 1/82	
Type A	$2700
Type B	$4400

Type A = Students reported at a program weight per term of 0.75 or less or as Upper Years Honours Science, Music, or Environmental Science at weight 1.0 per term. Type B = all other programs.

Graduate (1-Term Fee)

All Programs	$ 480

Non-exempt Foreign Students:

Reg'd in an Ontario university program before Sept. 1/82	$ 995
Not reg'd in an Ontario university program before Sept. 1/82	
Type A (Theology only)	$1350
Type B	$2200

7. Foreign Student Formula Fees

7.1 Exempt Categories

In 1982-83, one or another of three foreign student formula fees ($995, $1,350, or $2,200 per term) will apply to any student not demonstrably a member of at least one of the eight following exempt categories:

(i) A citizen of Canada within the meaning of the Canadian Citizenship Act or a person registered as an Indian within the meaning of the Indian Act;

(ii) A permanent resident within the meaning of the Immigration Act, 1976;

(iii) A visitor admitted to and remaining in Canada under clause 10(c) of the Immigration Act, 1976, who has entered Canada or is in Canada to carry out his official duties as a diplomatic or consular officer or representative or official properly accredited of a country other than Canada, or of the United Nations or any of its agencies or of any intergovernmental organizations in which Canada participates or as a dependent or a member of the staff of any such diplomat, consular officer, representative or official;

(iv) A dependent of a visitor admitted to and remaining in Canada under clause 10(c) of the Immigration Act, 1976, for the purpose of engaging in employment;

(v) A person admitted to and remaining in Canada who is officially recognized by the Employment and Immigration Commission of Canada as a Convention refugee within the meaning of the Immigration Act, 1976;

(vi) A person admitted to and remaining in Canada under clause 10(a) or 10(b) of the Immigration Act, 1976, who is sponsored and financially assisted by one of the following:

. the Canadian International Development Agency,

. the International Development Research Centre,

. any program of financial assistance to students under an aid program of the United Nations or its agencies provided such a program is recognized and directly or indirectly assisted by the Government of Canada (qualifying programs include: Commonwealth Scholarships and Fellowships, NRC Associateships, CIDA bilateral traineeships, and any sponsoring programs of the Food and Agricultural Organization, the International Atomic Energy Agency, and the World Health Organization)

. an aid program to developing countries provided by a recognized international private charitable foundation, provided that the program has received the prior written approval of the Minister;

(vii) A person admitted to and remaining in Canada under clause 10(a) or 10(b) of the Immigration Act, 1976, who is studying in Canada under a cultural exchange agreement between the Government of Canada and the government of another country, provided that under such an agreement, the number of places made available in Ontario universities, Ryerson or the Ontario College of Art normally equals the number of places made available to Ontario residents in the other country;

(viii) A person admitted to and remaining in Canada under clause 10(a) or 10(b) of the Immigration Act, 1976, who is a holder of an Ontario Graduate Scholarship.

In clause 1(iv) "visitor" means parent or person appointed by order of a court as the legal guardian of a child in place of a parent, and "dependent" means a person wholly dependent on such a parent or guardian for support and who is

(a) under 18 years of age, or
(b) 18 years of age or over

and in full-time attendance at an eligible post-secondary institution.

7.2 Non-Exempt Foreign Students

During May-August, 1982, a single foreign student formula fee of $995 per term will apply to all non-exempt foreign students. Starting on September 1, 1982, however, such students will be divided, for formula fee purposes, into three groups as follows:

NON-EXEMPT FOREIGN STUDENTS		
"IN PROGRAM"	"NEW REGISTRANTS" (Sept. 1982 Onwards)	
	TYPE A	TYPE B
$995 PER TERM FORMULA FEE	$1,350 PER TERM FORMULA FEE	$2,200 PER TERM FORMULA FEE

7.3 Grandfather Clause

(1) The "In Program" formula fee level, with annual increases at the same rate as for Canadian students, will be available for students who qualify for it until they have completed their current programs or until May 1, 1986, whichever occurs earlier.

(2) Until the earlier of these dates, a non-exempt foreign student will be considered "In Program" if by September 1, 1982, he/she has successfully completed, in his/her program, work equivalent to at least the normal load for a term of a full-time student in that program, unless, after September 1, 1982, he/she

(i) transfers more than once to another program at the same level, or

(ii) registers in a program at a different level, or

(iii) changes institutions (Ontario universities, Ryerson and OCA) more than once at the same level.

(3) Any of these actions will be deemed as changing the status of the doer from "In Program" to "New Registrant", except for the following level changes which do not constitute new registrations:

(a) one transfer from a program at "undergraduate baccalaureate level" to the "professional level" or vice versa provided that the "professional level" program starts at the post-grade 13 level (e.g. engineering or pharmacy but not medicine or law).

(b) transfers from any level to special/unclassified level if the purpose of such a transfer is (a) to earn credits towards a degree or diploma at another Ontario institution while studying on a Letter of Permission, or (b) to earn credits to make up failed or otherwise deficient course in an incomplete regular degree program at the same level and institution.

(c) one transfer to a Master's Program from a preparatory make-up program, if work completed on the make-up program by September 1, 1982, was equivalent to at least the normal load for a term of a full-time student in the make-up program.

7.4 Definitions

(1) Program: For the purpose of this regulation, a program is defined as a sequence of courses or other units of study prescribed by an institution for the fulfilment of the requirements of a particular degree, diploma or certificate.

(2) Change of Program: A change from one sequence of courses or other units of study that fulfill the requirements of a degree, diploma or certificate to another sequence of courses that fulfill the requirements of a different degree, diploma or certificate, even if course credits are transferred from one program to the other. Examples:

(i) transferring from a professional program (post-grade 13) to Arts or vice versa

(ii) transferring from Arts to Science or vice versa

(iii) transferring from a General to an Honours Program, where each requires different courses. When the General and Honours Programs have the same courses, and when differentiation between programs is the number of courses required and/or the average received, changes from one program to the other are not considered a program change.

(3) Program Level: For the purposes of this regulation, the levels are defined as:

- preliminary or qualifying year
- diploma
- certificate
- undergraduate baccalaureate
- professional
- master's
- doctoral
- special or unclassified

(4) Professional: As used in this regulation, "professional" refers to programs leading to diplomas or degrees in the following disciplines: Agriculture; Architecture; Business; Commerce; Administration; Dentistry; Divinity or Theology; Education; Engineering; Forestry; Home Economics; Food Sciences; Hygiene; Journalism; Law; Library Sciences; Medicine; Music; Nursing; Optometry; Pharmacy; Physical and Health Education and Recreation; Rehabilitation Medicine; Secretarial Services; Social Work; Veterinary Medicine and Animal Sciences.

(5) Normal Full-time Load for a Term

This is intended to carry the same meaning as it does in Section III, on the Counting of Students, of the Ontario Operating Formula Manual.

A non-exempt foreign student therefore could not be claimed as "In Program" unless by September 1, 1982.

- if an undergraduate, his/her work before that had represented at least 0.5 FFTE's or

- if a graduate student, his/her work before that had represented at least 1.0 Term FTE's in his/her university's enrolment reports.

(6) "In Program" Non-Exempt Foreign Student

This is defined above in Section 7.3. Note the three situations, outlined in paragraph 7.3(2), which cause a non-exempt foreign student who was originally, "In Program", to lose that status and become a "New Registrant".

(7) "New Registrant" Non-Exempt Foreign Student

This description applies to a non-exempt foreign student who registers for the first time in a program at a given institution on September 1, 1982, or after and who does not meet the "In Program" definition.

Formula fees per term for "New Registrants" will be $1,350 for Type A, and $2,200 for Type B, during the eight-month period ending on April 30, 1982.

Those students will be classified as Type A who are reported under the Ontario Operating Grants Formula at a weight per term of 0.75 or less, or as Upper Years Honours Science, Music or Environmental Science at weight 1.0 per term. All others will be classified as Type B.

7.5 General

Although, owing to their fee autcnomy, universities do not have to charge the fees set for non-exempt foreign students, they will be deducted as formula fees. Accordingly, all such students must be correctly reported and the appropriate formula fee assessed.

Foreign fee supplements (the excess of foreign over normal program formula fees) will be deducted on a current year basis. The formula grant will first be calculated in the usual manner, and then the foreign fee supplements, based on current year enrolment, will be deducted.

8. Categorization and Weighting

Categories of enrolment have deliberately been kept as few as possible. One full-time student enrolled for two terms of general degree work offered in a liberal arts program generates one basic income unit. Work in honours, professional and graduate programs is related on a rough cost basis to this basic core.

8.1 Undergraduate, Diploma and First Degree

Category 1	Weight 1

First year Honours Arts and Science and Social Work Undergraduate Diploma courses, other than those specifically listed below or otherwise provided for in Annual Essential Notes and Instructions.
General Arts
General Science
Journalism
Pre-Commerce and Business Administration

Pre-Medicine
Secretarial Science
Theology - both degree and diploma

Category 2 — Weight 1.5

Upper years Honours Arts (including "make-up" year)
Art as Applied to Medicine (University of Toronto)
Commerce and Business Administration
Fine and Applied Arts
Law
Library Science (including "make-up" year)
Physical Education
Physical and Occupational Therapy - both degree and diploma
Social Work - upper years only

Category 3 — Weight 2

Upper years Honours Science (including "make-up" year)
Agriculture
Architecture
Education - both elementary and secondary.
Engineering
Environmental Studies
Food and Household Sciences
Forestry
Hygiene and Public Health
Industrial Design (Carleton)
Music - both degree and diploma
Nursing
Pharmacy
Dental Hygiene - diploma course
Public Health Nursing - diploma course

Category 4		Weight 5
Dentistry		
Medicine (except years 2 and 3 of McMaster 3 Year Program)		
Veterinary Medicine		

8.2 Miscellaneous Undergraduate Programs which do not fall into the above Categories

Engineering and Forestry Technology (Lakehead University)		1.2
All undifferentiated undergraduate programs in the Faculty of Arts and Science at the University of Toronto, Scarborough College and Erindale College	1972-73 to 1975-76	1.24
	1976-77 and 1977-78	1.279
	1978-79 to 1980-81	1.326
	1981-82 and after	1.334
Four Year Concurrent Teacher Education Program		1.25
Engineering and Management		
- Years 2 and 4		1.5
- Years 1, 3 and 5		2.0

York (all undergraduate excluding Law)
- between 1976-77 and 1978-79 - 1.284 - regular weighting before 1976-77 and after 1978-79.

OISE Programs:

Certificate in Adult Education (qualifying or make-up year)	1.0

Master of Arts 1.5

Master of Education
- 10 unit (without Honours) 2.0

Ryerson: All programs: 1974-75 - 1.22; 1975-76 to 1979-80 - 1.30; 1980-81 - 1.30 (Base) and 1.38 moving average. After 1980-81: Base 1.34
Moving Average 1.36

Ontario College of Art (since 1976-77) 1.3

Medical Interns and Residents
(three terms) 2.5

Optometry (Years 2-5) 3.0

McMaster 3 Year Medicine Program -
Years 2 and 3 only 7.5

8.3 Graduate

Note: All graduate Theology Programs
- at a weight of ½ per term

Category 5 Weight 2 (or 1 per term)

Master's Level (and First-Year Ph.D direct from Baccalaureate)
Commerce and Business Administration
Hospital Administration
Journalism
Public Administration

Category 6 Weight 3 (or 1 per term)
Master's Level (and First-Year Ph.D direct from Baccalaureate)
Criminology

Education
Fine and Applied Arts
Library Science (other than "make-up" year)
Law
Humanities
Mathematics
Physical and Health Education
Physio and Occupational Therapy
Social Sciences
Master of Philosophy (M.Phil.)
All Specialist Graduate Diploma Courses
Other graduates (see note 9.2)

Category 7 — Weight 4 or 1 1/3 per term

Master's Level (and First-Year Ph.D. direct from Baccalaureate)
Agriculture
Architecture
Art Conservation
Child Study
Dentistry
Engineering
Environmental Studies
Food and Household Science
Forestry
Geography
Hygiene and Public Health
Medicine
Music
Nursing
Pharmacy
Physiological Optics
Psychology
Science (Physical and Biological)
Social Work
Urban and Regional Planning
Veterinary Medicine

Category 8 — Weight 6 or 2 per term

All Ph.D. (except First-Year Ph.D. Direct from Baccalaureate)

9. Notes on Categorization and Weighting

9.1 Caveats

The categorization scheme does not pretend to reflect precisely the relative costs or the relative importance of each program at every university. There is no intention that the relationship in the categorization table should be reflected in detail in the spending of any university. The formula was designed to produce a reasonably equitable overall distribution of basic government grants and was never intended to be a pattern for spending.

The formula weights do not necessarily reflect differences in costs among various subjects within a given program or among program years. In line with the relatively simple income distribution purposes of the formula, these differences have been averaged out in the process of assigning weights.

9.2 "Other Graduates" as shown in Category 6 includes all graduate degree and diploma programs not specifically covered in the descriptions of other categories.

9.3 Students in the upper years of honours undergraduate work in psychology, geography and mathematics shall be included in Category 3 (weight 2.0) since costs of undergraduate honours work in these subjects appear to be, on the

average, similar to costs in honours science. At the master's level, however mathematics would seem to be more appropriately grouped with the humanities and social sciences and is therefore included in Category 6 (weight 3.0), while psychology and geography, because of laboratory and field work requirements, are again classed with science and engineering in Category 7 (weight 4.0).

10. Eligible Institutions

The following institutions are eligible to claim support as outlined in this document subject to any limitations that may subsequently be imposed by the Minister or his designate:

Brock University
Carleton University
University of Guelph
Laurentian University
Algoma College
Nipissing College
College de Hearst
Thorneloe University
University of Sudbury
Huntington College

McMaster University
McMaster Divinity College

University of Ottawa
St. Augustine Seminary
St. Paul University

Trent University
University of Waterloo
Renison College
St. Paul's United College
The University of St. Jerome's College
Conrad Grebel College

The University of Western Ontario
Brescia College
Huron College
King's College

Wilfrid Laurier University
Waterloo Lutheran Seminary

University of Windsor

York University

Queen's University
Queen's Theological College

Ontario Institute for Studies in Education

University of Toronto
St. Michael's College
Trinity College
Victoria College
Knox College
Wycliffe College
Regis College

Ryerson Polytechnical Institute

Ontario College of Art

Dominican College

11. Program Approval Policy

11.1 Undergraduate

A. Policy between 1974 and November 2, 1981

With the approval of their Senates, invitations were free to establish new undergraduate programs, and have them funded automatically. Only undergraduate programs of the following types required Ministry approval:

(1) new professional programs
(2) new health science programs
(3) new Ryerson and Ontario College of Art programs
(4) new programs requiring extra formula support, and
(5) new programs not included in existing weight categories which required a formula weight above 1.0

B. Policy between November 2, 1981 and December 15, 1982

On November 2, 1981, the Minister announced a freeze on all new undergraduate program under which:

(1) universities were asked to introduce no new undergraduate program without prior consultation with the Ontario Council on University Affairs;

(2) universities could only report enrolment in a new program for formula grant purposes if the new program had received

(a) O.C.U.A.'s recommendation for funding, and
(b) Ministry funding approval.

The freeze applied to any undergraduate program offered by a university after November 1, 1981, which in content, format, or mode of presentation differed significantly from any of the programs previously offered by that university in which students were enrolled. Wherever clarification was required on the application of this general definition to particular cases, it was the university's responsibility to obtain it from the O.C.U.A.

Enrolment in new programs not approved for funding were to be reported as ineligible for formula grants.

The freeze requirements outlined above were terminated in December, 1982, and replaced by

C. Policy from December 31, 1982

(1) New programs in basic "core" Arts and Science disciplines may be reported for formula grant purposes without OCUA or Ministry funding approval, except where such a new program

(i) does not have a formula weight already assigned and a weight greater than 1.0 is sought; or

(ii) will require extra formula support; or

(iii) cannot be accommodated within existing available university facilities.

Programs in basic "core" Arts and Sciences disciplines are:

Biological Sciences
English Language and Literature
French Language and Literature
General Arts and Science
Humanities
Mathematical Sciences
Physical Sciences
Social Sciences
Theology

(2) All other new university programs at the undergraduate level, including professional, quasi-professional and "special" programs (i.e. limited demand programs outside the category defined as basic "core" Arts and Science) may be reported as eligible for formula operating grants only after review and recommendation by the O.C.U.A. and funding approval by the Ministry.

Hybrid programs consisting of courses falling partly into category (1) and partly into category (2) are subject to

review, recommendation and funding approval.

OCUA Advisory Memorandum 82-V11 will provide guidance in most cases for determining whether a program is new and, if so, whether or not it requires Ministry funding approval.

Wherever further clarification is needed on either point, it is the university's responsibility to obtain it from the O.C.U.A.

11.2 Graduate

On all graduate programs, after the appropriate ACAP and OCGS requirements have been fulfilled, the policy for program approval requires the recommendation of the Council of Ontario Universities to the OCUA, and the OCUA's recommendation to the Minister for final approval. All approvals will be subject to any embargo, freeze, etc. that may be in effect at the time.

11.3 Theological Colleges

Any institution which has not affiliated, as outlined in 11.2, cannot claim as eligible any student enrolled in a program introduced since September 1, 1967. Government funding responsibility for theological colleges relates only to those programs and institutions in existence on September 1, 1967, unless written approval from the Ministry for additional programs or institutions is obtained.

12. Evolution of the Formula

The most fundamental changes in the Formula since its inception have been introduced for the purpose of improving funding predictability and/or stability through changes in the year or years of enrolment used in calculating formula grants. The following table indicates their nature and timing:

YEAR(S) OF ENROLMENT USED AS GRANT BASIS	GRANT YEAR	67/68-72/73	73/74-75/76	76/77	77/78	78/79	SINCE 79/80
Grant Year	U.G.	X					
	Grad	X					
Year Before Grant Year	U.G.		X				
	Grad		X				
2/3 Year Before Grant Year + 1/3 Year Before That	U.G.			X			
	Grad						
1975-76	U.G.						
	Grad			X	X	X	
Average of 3 Years Before Grant Year	U.G.				X		
	Grad						
F.B. + (1-D.F.)(M.A.-F.B.) Where Aver. of 74/5, 75/6 & 76/7 = Funding Base, and Aver of 3 Yrs. Before Grant Year = Moving Average and Discount Factor = 1/2 for U.G. & M.A., 2/3 for Ph.D.	U.G.					X	X
	Grad						X

It can be seen that, during the first six years, formula grants were based on current year enrolment. The change to slip-year in the next three-year period followed deficits caused by unforeseen enrolment declines at a few universities in the early seventies and responded to the by then generally recognized need of university administrators to have knowledge of revenues at least one year ahead, for effective management.

In 1976-77, two notable developments began: the transition from the single-year enrolment system to enrolment averaging as the basis for undergraduate formula grants, and the three-year "freeze" with respect to funding of graduate work. The advantages seen in enrolment averaging (which retained slip-year) were an extension from one to three years in revenue predictability, and therefore, expenditure planning, and a great improvement in fiscal stability, particularly for the institutions most likely to be affected by the general decline in enrolment being predicted at that time. The graduate "freeze" was intended: to allow time for studying alternatives to the formula arrangements associating both teaching and research costs with numbers of graduate students; to ensure (given the advent of global funding) that the development of new graduate programs would not take place at the expense of the financial viability of the system as a whole; and to neutralize the steering effects of the formula towards program proliferation.

The latest latest steps in the evolution of the formula began in 1978-79, with the introduction of the discounting feature into the undergraduate portion of the formula grant calculation. This called for the designation of one averaged set of 3 years' weighted enrolment as a fixed funding base (giving a "normal" base year) and another averaged three-year set as a "moving average" (representing the trend of more recent enrolments). 1974-75, 1975-76 and 1976-77, the same years used in calculating undergraduate formula grants for 1977-78. were selected as the years for the fixed funding base. The three years preceding the grant year - in this case, 1975-76, 1976-77, and 1977-78 - were designated as the moving average. For calculating undergraduate formula operating grants, these two averages are combined, and a 50% discount factor applied to their difference, as follows:

$$F.B. + (1 - D.F.)(M.A. - F.B.)$$

50% was chosen because this is the percentage used by O.C.U.A. and the government as a discount for enrolment growth in calculating global funding requirements. A marginal FTE gained or lost causes total costs to go up or down by less than the average cost per F.T.E.: 50% is an approximation of marginal to average cost per F.T.E. The introduction of discounting represented a final step in the process of reducing the formula's sensitivity to enrolment change: institutions with declining enrolment were further protected; the rest continued to receive a reasonable measure of support for enrolment growth.

By the end of 1978-79, the last year of the "freeze" with respect to funding of graduate work, the Council of Ontario Universities had introduced revised by-laws pertaining to the graduate planning/appraisals process. The changes placed a much greater emphasis on quality than had previously existed in the planning process, and provided that all existing graduate programs in all disciplines would be subjected to rigorous quality appraisals. With respect to new graduate programs, the Ontario Council on University Affairs had begun to apply strict approval criteria emphasizing quality and need, and the avoidance of duplication.

With these controls in place, normal formula funding could be resumed for graduate work, and was resumed in 1979-80 on the pattern adopted the previous year for undergraduate studies, viz.

$$F.B. + (1 - D.F.)(M.A. - F.B.)$$

A discount factor of 50%, as for undergraduate studies, was adopted for master's and graduate diploma

formula grants. For doctoral programs a slightly different approach, designed, in part, to protect funding for research and scholarship, was thought appropriate. The difference was in the discount/stability factor to be applied at the doctoral level: 2/3 instead of ½ - meaning that 1/3 of the difference between the fixed base B.I.U.'s and the moving three-year average B.I.U.'s is added to the base to determine an institution's total doctoral BIU's. In the extreme case of a reduction of doctoral enrolment to NIL the affected institution would continue to be funded for 2/3 of the doctoral BIUs in the fixed base.

II OPERATION OF THE FORMULA

1. The Formula in 1982-83

A summary of major changes in the formula since its inception in 1967-68 can be found at the end of this section (II.13). The following is a brief description of its present configuration.

1.1 Objectives

(1) Funding stability: prevention of extreme year-to-year fluctuations in income; preservation of a base for scholarship and research in universities with enrolment declines.

(2) Funding predictability: possibility of accurately forecasting income two or three years ahead as a basis for realistic expenditure planning.

(3) Accountability to the public: the linking of funding to some quantifiable factor (i.e. enrolment).

(4) Administrative practicability: a mechanism simple enough so that it is easy to use and can be widely understood.

1.2 How it works

(1) For each academic year, undergraduate and graduate students are converted to full-time equivalents (FTE's). Next, a weight is assigned to each FTE according to the student's program and level of study. Weighted FTE's are then totalled to obtain

undergraduate and graduate total B.I.U.'s for the year. A further division (required because different discount factors apply to them) produces separate totals for Graduate Level II (doctoral students) and Graduate Level I (all other graduate students).

(2) A formula (or standard) fee is assigned to each FTE according to the student's program and level of study. For each academic year, separate totals are calculated for Undergraduate, Graduate Level I and Graduate Level II formula fees.

(3) A foreign fee supplement is calculated for each foreign student: it is the difference between the foreign student fee and the normal formula fee level. These supplements are accumulated into a single total for each academic year. Unlike regular formula fees, foreign fee supplements are not subject to averaging and discounting, but are reflected in the formula grant calculation, (as part of total formula fees) on a current year basis (C.Y.F.F.S.'s later on, stands for current year formula fee supplements).

(4) Formula Grant Calculation
Basic Elements

(a) Funding base (F.B.): a base position from which either growth or decline can be measured, calculated by averaging B.I.U. and formula fee data for the three years 1974-75, 1975-76, and 1976-77.

(b) Moving average (M.A.): reflecting the trend of more recent enrolments, the moving average is also calculated by averaging B.I.U. and formula fee data for three years: the last, in this case, being the year before the grant year in question (for grant year 1982-83, the moving average years are 1979-80, 1980-81 and 1981-82).

(c) Discount Factors (D.F.): of 50% for Undergraduates and Graduate Level I, and 66 2/3% for Graduate Level II, are applied to changes, whether up or down, between the base and moving average in the grant calculation.

(d) Averaging: the way in which B.I.U. and formula fee data for various fiscal years are combined in the formula grant calculation.

(e) Funding B.I.U.'s (U.G.F.B.I.U.'s, GR.F.B.I.U.'s) and Funding Formula Fees (F.F.F.'s): are derived from the data of various fiscal years by the application of discounting and averaging: -

$$F.B. + (1 - D.F.)(M.A. - F.B.)$$

In deriving Funding Formula Fees, the formula fees of past years, if different, are restated at current rates.

(f) Undergraduates (U.G.B.I.U.V.) and Graduate (GR.B.I.U.V.) Basic Income Unit Values: These two unit values are set annually by the Government on the basis

of recommendations from the O.C.U.A. For 1982-83, the former is $3,669 the latter $3,576 (subject to upward adjustment in the last quarter of the Government fiscal year).

Grant Calculations:

(a) U.G.F.B.I.U.'s x U.G.B.I.U.V.
plus
(b) GR.F.B.I.U.'s x GR.F.B.I.U.V.
minus
(c) F.F.F.'s
minus
(d) C.Y.F.F.S.'s

2. Church-Related Universities and Colleges

At the end of the 1966-67 fiscal year, the Federal Government ceased directly supporting institutions of higher learning and implemented, in its place, a program of fiscal transfer with each province. Since 1967-68, when non-denominational universities came to be financed through the formula, the following arrangements have applied for the church-related colleges and universities.

Grants to denominational colleges were paid only for those institutions and programs which were in existence during the 1966-67 academic year and for which federal grants were paid. The only exception is Dominican College which became eligible for provincial support commencing in the 1973-74 fiscal year.

Each church-related institution, including theological colleges, which had received federal assistance, was provided with an annual provincial grant equivalent to 50% of the amount that would be derived from the application of the operating grants formula.

On September 1, 1974 a new policy was introduced to provide 100% support for students enrolled at the "church-related institutions" with the exception of those enrolled in theology. The conditions of eligibility for full support were:

2.1 that all students for which operating grants are claimed be registered at the constituent university and that the degrees awarded be those of the provincially assisted university;

2.2 that the standards of admission, curriculum, graduation, etc. be established and regulated by the appropriate academic bodies of the parent provincially assisted university;

2.3 that full operating support be limited to those provincially assisted universities currently qualifying for government support.

All church-related institutions and their parent institutions met the criteria and were provided with full support, except Regis and Dominican Colleges (Regis qualified for full support in 1978-79).

3. Programs in Theology

Beginning April 1, 1976 programs in theology became eligible for 100% support if the following criteria are met:

3.1 students must be registered at the parent provincially assisted university;

3.2 the degrees awarded must be those of the parent university;

3.3 the standards of admission, curriculum and graduation must be established by the provincially assisted university;

3.4 institutions not presently affiliated with a provincially assisted university must negotiate an affiliation.

Institutions not wishing to affiliate or suspend degree-granting powers continued to be eligible for support at the 50% level. As of November, 1982, only Dominican College had not met the criteria.

Evidence of eligibility for 100% support is given in writing by the Ministry to the parent institution. Without such approval only the previous 50% level may be claimed.

4. Programs in Education

Some recommendations contained in the report entitled Financing University Programs in Education were accepted and implemented by the Government in 1972. Basically, the weight of 2.0 was assigned to all F.T.E. students in undergraduate programs, with phasing-in provisions for transferred programs; the weight of 3 was assigned to Master's level program and 6 to Doctoral level programs.

Each university undergraduate teacher education program operates under an agreement with the Minister of Education under the authority of the Education Act. Responsibility for certification and related matters rests with the Minister of Education while all other responsibility rests with the Ministry of Colleges and Universities.

Only programs in education designated as "credit" level by the senate of the university concerned, and which also have the approval of the Minister of Education for certification purposes, where appropriate, are eligible for support.

The minima and maxima provisions for graduate enrolment counting in programs in education apply only for students first registering after June 30, 1971.

With effect from the beginning of 1980-81 policy on in-service courses is as follows:

All such courses which lead to university credit are eligible to be claimed for formula support. Any in-service courses not leading to university credit may be claimed for extra-formula support.

5. Minima/Maxima Provisions - Graduate Students

The purpose of the minima/maxima provisions is to ensure funding within a defined range independent of the actual number of years required by the individual student to complete his or her program of study, which may vary widely. These ranges are as follows:

Formula Category	Minima	Maxima
Category 6 (weight 3.0)	3 BIUs	6 BIUs
Category 7 (weight 4.0)	4 BIUs	8 BIUs
Category 8 (weight 6.0)	21 BIUs	27 BIUs

Note to Category 8:

Calculation of claims under these provisions must take into account all units claimed for the student while in Category 6 or 7.

5.1 The limits shown above came into effect commencing with the 1968-69 academic session, which was the first year for accumulating units to be counted against individual students (1971-72 for Education students). The minima entitlement provisions apply only to students whose graduate studies began in 1968-69 or later (1971-72 in the case of Education students).

5.2 If, upon graduation, the total units claimed for a student fall short of his or her minimum, the shortfall may then be claimed as a minimum adjustment.

5.3 Since it is not possible to predict on given reporting dates whether particular students will in fact be graduation at the conclusion of the semester being reported upon, claims for students under the minimum provision should be made after they graduate.

5.4 Students transferring into the Ontario system with advanced graduate standing shall have the number of BIUs ordinarily associated with the obtaining of such standing, attributed to them.

5.5 A graduate student transferring from one university to another within the Ontario system shall transfer only the remainder of his or her maximum total units.

5.6 Students who are still in attendance and who have reached their maximum limit should be reported as ineligible under the formula and no further BIUs may be claimed on their behalf.

5.7 Graduate students who transfer to graduate programs other than those originally embarked upon, and on which units were earned will be dealt with as follows:

(a) Where advanced standing was granted the units ordinarily associated with the obtaining of such standing should be attributed to the student.

(b) Where no advanced standing was granted no units previously claimed for the students need be carried forward.

5.8 Graduate students in programs approved for funding since the "freeze" ended, and for which 1979-80, but not prior, enrolment could be reported as eligible, shall have attributed to them the number of BIUs normally associated with their work in these programs to date even though part of it may have been completed before 1979-80 began.

5.9 Graduate Diploma Courses:
The minima/maxima provisions were intended to apply only to programs involving a dissertation and ordinarily extending beyond a single academic session. It was for this reason that enrolments in Category 5 programs and in graduate diploma courses were excluded for the minima/maxima provisions.

5.10 Claiming (or Deducting) of BIUs under Minima/Maxima Provisions:
The report of BIUs claimed or deducted under these provisions should be submitted on the prescribed form provided with the enrolment reports. Claims under the minima provisions

should be made in the report immediately following the graduation of the student for whom entitlement is being claimed. Students partially exceeding the maximum in the term being reported should be shown on the enrolment pages as generating the full BIU count in that term and the appropriate reduction to attain the maximum should be shown on the minima/maxima page; formula fees are to be deducted for all such students. Students who are still in attendance and who have entirely exceeded their maximum limit and for whom no units are claimed will not have formula fees charged against them. Any student in these circumstances will be reported as ineligible for grant purposes.

6. Fees and Bursaries - Graduate Students

6.1 The tuition fee exemption allowed to full-time students under the regulation in respect of the third of three terms consecutively attended was discontinued effective September 1, 1972.

6.2 Further, permission to use government grants and fees to offset the third term fee was discontinued effective September 1, 1975. For all graduate students exempt from the foreign student fee, including full-time equivalents of part-time students, a formula fee ($480 in 1982-83) will be deducted for each term of attendance.

7. Exchange Programs and Study Abroad Courses and Programs

Before 1981-82 students enrolled at Ontario universities but studying abroad were not eligible to be claimed for formula support unless

(a) their universities in Ontario incurred costs on their account similar to those that would be incurred were the students attending in Ontario, and

(b) Ministry approval had been obtained for reporting them as eligible.

Since 1981-82, the Ministry's policy on exchange programs and study abroad courses and programs has been as outlined below.

1. Formula Support is intended only for

1.1 Ontario university students registering in Ontario

1.2 enrolment in those credit courses or programs (excluding any offered as part of a holiday package of activities):

(1) designed as integral parts of specific degree programs,

(2) whose effectiveness would be seriously impaired if taught at home instead of abroad,

(3) whose duration in contact hours is not less than comparable courses or programs offered on campus during the same session.

2. Subject to the above proviso, a student abroad may be claimed for formula support if he is registered in an Ontario university and enrolled for credit in a degree program described in its official calendar, and is either

2.1 an exchange student studying abroad under the terms of a formal exchange agreement,

or

2.2 a student not part of an exchange program who has

(1) been assessed the regular academic fee for the course or program he is taking;

(2) received instruction

(a) paid for by his Ontario university, whether

(i) offered by the Ontario university's, own faculty, or

(ii) provided by faculty hired by the Ontario university, or

(iii) purchased from a university abroad attended by the student and leading to academic credit,

and

(b) whose direct cost (including only items on which provincial operating grants and fees can normally be spent) is similar to that which would be incurred if the student were receiving instruction at the home

university (minimum: 50% of basic income units claimed for him times current BIU value).

2.3 A foreign student studying in Ontario under the terms of a formal exchange agreement (cf. 2.1 above) may not be claimed for formula support.

2.4 Summary information on all study abroad courses and programs claimed for formula grants and all the necessary supporting data will be submitted annually by the responsible Deans on Ministry-prescribed forms to the Registrar, who will see that they are cross-referenced to individual student records and kept on file to be made available to university auditors during the course of their audits of enrolment (see Appendix D).

8. Students Enrolled at Unrelated Institutions

8.1 Cooperative Programs:

Wherever a student registered in a program at one institution receives some instruction in that program from another unrelated institution the following rules apply:

(1) No matter where the student is taught, BIUs may be only claimed by the student's home university. (i.e. the university where the student is registered).

(2) No matter where the student is taught, formula fees are to be shown only by the home university.

(3) The arrangement made for payment between the home and host universities should not be reflected in the enrolment reports. Such matters are internal to the institutions involved.

8.2 Letter of Permission

When a student receives a formal letter of permission to register in a course(s) at another unrelated institution, each institution may only claim BIU's for those courses for which the student is actually registered at that institution.

8.3 Visiting Graduate Students

When a graduate student is registered in a program at one institution and receives some instruction in that program at another unrelated institution, BIU's may be claimed only by the student's home university, i.e., the university where the student is actually registered. The arrangement made for payment between the home and host universities should not be reflected in the enrolment reports, as it is a matter internal to the institutions involved.

9. Arts and Science Programs Not Differentiated Between General and Honours

All students in undifferentiated programs in Arts and Science not assigned a special weight should be treated as if they were in the general course, except

in the case of fourth year students, who are readily acknowledged as being in the Honours category, and except for students in lower years who by virtue of academic standing, or other appropriate criteria embodied in university regulations, may reasonably be categorized as Honours students. Criteria for such differentiation, insofar as they effect the calculation of formula claim, are subject to approval by MCU.

10. Imputing Procedure for use by Universities

Where a university employs an undifferentiated program, it is usually impossible to determine first-year enrolments in programs which carry a weight in excess of 1.0 for first year, as first-year students are not differentiated until they pass into their second year. In these circumstances, for purposes of applying the formula categorization, enrolments in such programs shall be imputed as follows:

For each program carrying a weight in excess of 1.0 for first year:

10.1 Determine for year A, the ratio of second-year enrolment in that program to total second-year enrolment.

10.2 Calculate provisional first-year enrolment in that program by applying this ratio to total first-year enrolment. Year A's operating grant will be paid on this basis.

10.3 A year later, on the basis of programs actually taken by the former first-year students now in second year, redetermine the ratio.

10.4 Apply the amended ratio to Year A's total first-year enrolment. The result - for formula purposes - will be the final first-year enrolment in that program for Year A.

10.5 Year B's operating grant will be adjusted for the difference between provisional and final first-year enrolment in that program in Year A.

The above procedure can be extended to the second year of programs whose students are not identifiable as being enrolled in them until the third year. Ministry approval is required to claim imputed BIUs for funding. Such BIUs will be treated as normal BIUs for the purpose of financing.

11. The Audit of Enrolment

The formula is the principal method of distributing operating grants to the provincially assisted universities of Ontario. To ensure that the available funds are distributed on an equitable basis, the universities, the Ministry of Colleges and Universities, and the general public, must be satisfied that the enrolment data reflect an accurate count of students enrolled and that enrolment figures have been properly classified for purposes of the formula. To provide this assurance, an audit procedure was proposed.

The Committee of Presidents of Universities of Ontario agreed with the proposal and suggested that an independent auditor, guided by the instructions available to the universities for making enrolment returns, be engaged by the university itself to conduct the audit.

At the conclusion of the audit, the auditor makes his report to the Deputy Minister of the Ministry of Colleges and Universities. A full description of the audit of enrolment will be found in section IV.

12. Formula Interpretation

Under no circumstances should a university make decisions unilaterally on matters requiring an interpretation of the formula. Whether the problem is one of definition or one of programs not specifically identified in the formula categorization scheme, the matter should be formally raised prior to completion and submission of enrolment reports by writing to the Assistant Deputy Minister, University Affairs Division of the Ministry of Colleges and Universities.

FISCAL YEAR	BIU VALUE	FORMULA WEIGHTS	COUNTING OF STUDENTS
1967-68	$1,320		
1968-69	$1,450 + $24 computer grant		
1969-70	$1,530 + $26 computer grant	(i) undergraduate medicine 3.0 to 5.0 (ii) undergraduate dentistry 3.0 to 5.0 (iii) undergraduate veterinary med. 3.0 to 5.0 (iv) interns and residents 1.5 to 2.5 (v) thesis only category (wt. 1.0) discontinued: students to be claimed either as full or part-time.	(i) definition of graduate students for category 5 requires only general nor honours degree plus other new conditions. (ii) FTE part-time graduates including graduate summer school changed from a division of course registrations by 5 to a multiplication of part-time numbers by .30 reported and weighted on a trimester basis.
1970-71	$1,650 (computer grant incorporated in BIU value)	(i) Optometry from 2.0 to 3.0.	(i) Graduate summer school conversion factor changed from .30 to .50.
1971-72	$1,730		(i) 10 month fiscal year. (ii) Graduate formula fee increased from $133 per term to $242.50 per term; free third term introduced.
1972-73	$1,765		(i) Conversion factor for part-time undergraduates changed from course registrations divided by 6.0 to division by 5.5 for institutions with integrated full and part-time programs. (ii) $100 increase in formula fee for two terms. (iii) free third term ended; graduate bursary introduced.
1973-74	$1,825		(i) Slip year introduced. (ii) Part-time undergraduate conversion factor to 5.0.
1974-75	$1,955	(i) Upper years undergraduate social work from 1.0 to 1.5 (ii) Masters social work 3.0 to 4.0 (iii) Forestry technology 1.0 to 1.2 (iv) Engineering technology 1.0 to 1.2.	
1975-76	$2,111	(i) Ryerson weight established at 1.30.	(i) Graduate bursary terminated.
1976-77	$2,312 undergraduate $2,255 graduate	(i) Ontario College of Art weight established at 1.30.	(i) Undergraduate enrolment based on 1/3 1974-75 and 2/3 1975-76; graduate based on 1975-76 actual with 3 year freeze. (ii) Foreign student fee of $750 per term based on current enrolment. (iii) Fractional unit counting introduced. (iv) Three term undergraduate reporting.
1977-78	$2,542 undergraduate $2,478 graduate		(i) Undergraduate enrolment based on 1/3 1974-75, 1/3 1975-76 and 1/3 1976-77 (ii) $100 increase in formula fee for two terms except for foreign students.
1978-79	$2,678 undergraduate $2,611 graduate		(i) Undergraduate count based on Undergraduate Funding Base + 1/2 (Moving Average - U.F.B.).
1979-80	$2,833 undergraduate $2,762 graduate	(i) Ryerson Moving Average Weight changed from 1.30 to 1.38.	(i) Graduate Funding Base (average of 1974-75, 1975-76, and 1976-77) + for Masters 1/2 (Moving Average - GFB) and for Doctoral 1/3 (Moving Average - GFB). (ii) Formula fee increased by 5% overall.
1980-81	$3,061 undergraduate $2,985 graduate		(i) Formula fee increased by 7.5% overall. (ii) Limit of 10% above formula fee set for actual tuition fees; charges above 10% to result in formula grant reduction.
1981-82	$3,368 undergraduate $3,284 graduate	(i) Changes to Ryerson's institutional weights as follows: Funding Base from 1.3 to 1.34 Moving Average from 1.38 to 1.36.	(i) New policy introduced on exchanges and study abroad. (ii) Freeze introduced on new undergraduate programs. (iii) Formula fee increased by 10% overall.
1982-83	$3,669 undergraduate $3,576 graduate (subject to final quarter adjustment)		(i) Freeze is lifted and new program approval policy is introduced re new undergraduate programs. (ii) Extraordinary formula fee increases for "new registrant" foreign students to $1,350 and $2,200 per term, respectively, for Type A and Type B programs: effective Sept. 1, 1982. (iii) All other formula fees increased by 12.2% overall.

III COUNTING OF STUDENTS

1. The Counting of Undergraduate Students

Previously, full-time equivalent enrolment for part-time undergraduate students (except education) was calculated by multiplying the number of full-course registrations by a part-time conversion factor. This factor was 1/6 until 1971-72; changed to 1.5.5 for 1972-73 and 1/5 for 1973-74, 1974-75 and 1975-76.

Since the beginning of 1976-77, not only part-time, but also full-time students have been converted to "fiscal full-time equivalents". Each institution determines the conversion factors to be applied, which vary with the program, and may also vary with the registration level; once determined, however, each such conversion factor is applied to all students, whether full-time or part-time, in the same program at the same level. For each undergraduate student in a degree or diploma program, the fiscal full-time equivalent enrolment for a term is calculated by dividing his or her units of study for that term by the normal full-time study load for the academic year of that program. The fiscal full-time equivalent enrolment for the fiscal year is the sum of fiscal full-time equivalents for each term within that fiscal year. All enrolment reporting is on a term basis.

1.1 Definitions

For the purposes of calculating and reporting fiscal FTEs for undergraduate students -

"Term" A period of studies (including examinations) at a university of about 15-17 weeks in length; or one half an

academic year; or a semester; or the equivalent as determined by a university. The terms are deemed to be: spring term (May-August); fall term (September-December); winter term (January-April).

"Academic Year" — A period of studies (including examinations) normally comprising the months of September to April/May inclusive or the equivalent.

"Full-time Study" — A program of studies which enables qualified persons whose principal activity is study at a university, to qualify for the university's degree or diploma in a specified normal number of academic years or terms, assuming for purposes of definition, no more than one attempt at any part of those studies.

"Unit of Study" — A course, credit, credit hour or other unit of measurement established by a university to represent one part of the total requirements for completion of a degree or diploma program.

"Registration Level" — The ordinal number of years, terms, semesters, etc. employed by a university to indicate the standing of a student in the various stages or levels of a program (e.g. first year student, second year student, first semester student, etc.).

"Normal Full-Time Study Load" — The "Normal Full-Time Study-Load of an Academic Year" in a program leading to a degree or diploma is the number of units of study in that academic year needed to enable a student to complete successfully the program in the normal number of academic years of full-time study specified for that program.

"Fiscal Full-Time Equivalent" — An FFTE is represented by a student whose study load in the fiscal year is equal to the normal full-time study load for his or her program and level of registration in the academic year.

1.2 Application of Definitions

(1) The great variety of programs leading to degrees and diplomas means that these definitions must be interpreted and applied by each institution to the calculation of FFTEs in a manner which conforms with the nature of the program itself while, at the same time, complying with the intent of these definitions. Some examples are provided as guidelines:

(a) Some programs measure progress toward the degree or diploma and express requirements for completing the program in exact numbers of units of study. For such programs, the <u>"normal full-time study load" for an academic year is the total number of units of</u>

study required to complete the program, divided by the number of academic years of full-time study specified for that program. The FFTEs for a term are calculated by dividing the number of units of study registered by students in the program on the term count date, by the "normal full-time study load" for the academic year.

(b) Some programs measure student progress toward the degree or diploma in "blocks" of study usually of an academic year in duration. All work prescribed is compulsory, and promotion is from one "registration level" to the next rather than by discrete units of study. There is no part-time study, and students are not permitted to complete the degree or diploma requirements in less than the specified number of academic years or terms of full-time study. The only instance where a study overload is taken is for repeating failed work. In this case, the "normal full-time study load" is the total work of the academic year. The FFTEs for the term are equal to half the number of students registered in the program on the count date of the term.

(c) Some programs, particularly some honour and professional programs, prescribe variable "normal full-time study loads" reflecting the fact that within the same program, there may be

differences in the work expected of individual students for the same degree or diploma. This arises because of differences in enrichment or emphasis. For such programs the "normal full-time study load" is any amount of work within the range prescribed. For students whose study loads are outside the range, the "normal full-time study load" would be the mid-point of the range, unless the institution identifies a point more representative of the loads of students engaged in full-time study in that program. The FFTEs for a term would be equal to half the number of students within the range of the "normal full-time study load" and, for students whose study loads are outside the range, the FFTEs would be determined by the sum of the study loads taken by such students in the term, divided by the normal full-time study load for the academic year. The total FFTEs for the term is the sum of the two situations above.

(d) In the case of students not registered in programs leading to degrees or diplomas but enrolled in units of study which are normally credited toward degrees or diplomas, the "normal full-time study load" and the method of calculating the FFTEs is governed by the program to which the units of study are usually credited.

(2) For a course or other unit of study to be eligible to be included in the calculation of eligible FFTEs

(i) it must be taken for credit;

(ii) it must normally be acceptable for credit as fulfilling in part the requirements for a degree or diploma of that institution;

(iii) the student must be held academically responsible for his or her achievement in it (i.e. success, failure, etc. must be noted on the student's permanent record) in a way consistent with treatment of all courses or other units of study in that program.

A course or other unit of study normally credited toward a diploma may not be regarded as eligible to be included in the calculation of eligible FFTEs in a degree program unless it is normally accepted by the institution as fulfilling in part the requirements for a degree.

(3) The FFTEs for students registered on the applicable count dates in the summer sessions or intersessions are calculated by adjusting, if necessary, the units of study to make them equal in credit value to units of study of an academic year in length and dividing these (adjusted) units of study by the "normal full-time study load" of the program for the academic year.

1.3 Part-Time Studies

Any university claiming support for students not engaged in studies on a full-time basis, will be expected to meet the following criteria:

(1) Faculty and Teaching Staff

Instructors of part-time students are full members of the appropriate department and faculty with the full privileges and responsibilities of any regular of part-time faculty member. Appointments to the faculty, terms and conditions of work, including remuneration, should be consistent within the institution irrespective of whether a faculty member is teaching full-time or part-time students. Payment for services rendered should be based upon a regular teaching load, without regard to the time of day at which courses are taught.

(2) Academic Structure

The development of courses of study for part-time students should be handled within the normal university structure under the direction of the Senate or appropriate academic governing body. In universities where a college system is operative, it may be deemed appropriate to establish or maintain a special college having specific responsibility for part-time students. In such cases the college itself, as well as the members of the teaching faculty and students, should have the same relationship to the university, including participation

in the governing structure, as would prevail with any other college.

(3) Admissions, Examinations and Academic Regulations

Regulations for part-time students should be built into the overall academic structure in such a way that the requirements for admission, promotion, degrees, etc., applying to part-time students are identical with those for full-time students. Special regulations for mature students, for example, should be university-wide or faculty-wide, without respect to whether a student is proceeding towards a degree on a part-time or full-time basis. While it is recognized that some special academic regulations for part-time students in particular may be required, these and academic regulations of a similar nature <u>not</u> specially for part-time students should be developed and administered by the same bodies and in the same manner.

(4) Scheduling

The university should schedule its classes on an integrated, extended day program which allows part-time students to enrol in classes offered during either day or evening hours and full-time students to attend classes specifically scheduled for part-time students when practical. The foregoing does not apply to work done through correspondence courses.

(5) Overload teaching is not precluded in special circumstances.

(6) Any questions of interpretation with respect to the eligibility of part-time students at university should be referred to the University Affairs Division of the Ministry of Colleges and Universities.

2. Graduate Student Status

2.1 (a) A graduate student claimed for formula support must:

(i) be engaged in studies requiring an honours undergraduate degree or its equivalent as a prerequisite for admission (except for students enrolled in Category 5 graduate programs where the honours degree admission requirement does not apply). Students holding an undergraduate general degree or its equivalent and enrolled in programs listed under Categories 6,7 and 8 should be identified as "qualifying year" or "make-up" students and reported as undergraduates;

(ii) be making substantial demands upon the resources of the university where registered;

(iii) not be enrolled in a baccalaureate program in any of the following professional fields: social work, library science, law, medicine, teacher education (even if such a

student possesses an honours undergraduate degree, he or she is not considered to be a graduate student);

(iv) not be ineligible for any of the reasons outlined in the section headed "ineligible students" (section 3 below).

2.1 (b) A full-time graduate student must:

(i) be pursuing his or her studies as a full-time occupation;

(ii) identify himself or herself as a full-time graduate student;

(iii) be designated by the university as a full-time graduate student;

(iv) be geographically available and visit the campus regularly. Without forfeiting full-time status, a graduate student, while still under supervision, may be absent from the university (e.g. visiting libraries, doing field work, attending a graduate course at another institution, etc.) provided that, if any such period of absence exceeds four weeks in any one term, written evidence shall be available in the Graduate Studies Office to the effect that the absence has the approval of the Chairman of the Department and the Dean of Graduate Studies;

(v) not be employed outside the university except by permission of his or her supervisor;

(iv) not be regularly employed, save in most exceptional circumstances, on other work or by the university for more than an average of ten hours per week for any term during which he or she is registered as a full-time graduate student. If the student is employed as a teaching fellow or demonstrator, the ten hours per week should represent the total time spent by the student in connection with the appointment - including preparation, marking examinations etc.

(vii) As well as meeting the requirements for full-time status listed above, a student reported as belonging to the special category known as "summer school graduate students", must have been enrolled in a graduate full-time summer program of not less than six weeks' duration. The full-time equivalents of summer school graduate students are arrived at by multiplying student numbers by a conversion factor of .50. If reported as a full-time summer school graduate in the enrolment for a term report, a student could not also, for that term be report as a part-time student. The general rule, is that no student can be counted in more than one basic category (full-time, part-time or summer school) in any one term.

(c) Part-time Graduate Students

All active graduate students other than full-time graduate students as defined above are part-time graduate students.

2.2 The Counting of Graduate Students

During the period of the graduate freeze which began in 1976-77 and was subsequently extended for two more years, actual numbers of graduate students in 1975-76 were used to calculate annual graduate formula operating grants. Formula suspension was then lifted, and, beginning in 1979-80, normal formula funding for graduate work was resumed, on the pattern (fixed base and moving average) adopted a year earlier for calculating undergraduate formula grants, as explained at the end of Section I, under "Evolution of the Formula". This brought into play eligible graduate enrolments reported for all years, 1974-75 through to 1978-79, including minima/maxima graduate BIUs and enrolment in graduate programs approved since the announcement of the graduate freeze.

2.3 Graduate enrolment is counted on a trimester basis as for undergraduates. Enrolment for two semesters is required for the completion of a "year" for students in Category 5 (weight 2), while three semesters would be required for each full "year" in Categories 6 (weight 3), 7 (weight 4) and 8 (weight 6). Accordingly, students in Category 5 and Category 6 will earn a weight of one for each semester of attendance, while Category 7 and 8 students will earn, per semester, weights of 1 1/3 and 2.0 respectively. The requirements for graduate student status are described in Section III (2), above.

2.4 In 1970-71, minimum and maximum limits were set to the number of BIUs which a graduate student could generate for a university. These limits apply to students commencing graduate work in 1968-69 or later (1971-72 in the case of Education students).

For Master's candidates in the sciences (i.e. formula Category 7) the maximum is eight units; for those in the social sciences and humanities (Category 6) the limit is six units (equivalent in each case to six trimesters or two years of full-time attendance after an honours undergraduate degree). Doctoral candidates (Category 8) are limited to a maximum of 27 units, including units earned at the Master's level.

For students who graduate having earned fewer than the minimum units allowed (3, 4 and 21 for Categories 6, 7, and 8 respectively), the university can claim the difference between earned units and the minimum.

A more detailed treatment of this subject will be found in Section II(5), entitled "Minima/Maxima provisions - Graduate Studies".

2.5 Part-time graduate students should be reported on a trimester basis, calculating the number of term FTE students by multiplying actual students enrolled by 0.30 (three-tenths).

2.6 The conversion factor for Graduate Summer School students, who are considered as being full-time for <u>one-half</u> a semester (six to eight weeks), is .50.

3. Ineligible Students

3.1 Those enrolled in graduate programs introduced after spring 1971 which have not received approval in writing from the Ministry of Colleges and Universities.

It should not be assumed, in the absence of an immediate response from the Ministry to specific matters raised by a university, that financial approval has been granted automatically. Accordingly, enrolment data submitted by a university as official eligible enrolment projections should exclude any programs not approved in writing at the time of submission, unless their inclusion has been specifically authorized. Provision is made for the reporting of such enrolment in unapproved programs as ineligible, and, should the program be subsequently approved, the appropriate figures will be added by the Ministry to the eligible projection.

3.2 Those enrolled in programs of study for which ordinary formula support has been specifically denied.

3.3 Students "auditing" university credit courses (possibly) registered in a course, but not paying the full fees or taking them for credit standing).

To be claimed as eligible, a student must have taken a course for credit standing. Mere registration in a course does not mean eligibility for formula support.

3.4 Students registered in First Year of undergraduate degree programs, who on the applicable count date, have not successfully completed the requirements for the Ontario Secondary School Honour Graduation Diploma or the equivalent from other educational jurisdictions except:

(a) mature students

(b) students registered in Music at the University of Toronto who have completed the requirements for the Ontario Secondary School Graduation Diploma and have certain additional qualifications in music

(c) students registered in the transitional year program of the University of Toronto who lack the ordinary entrance qualifications because of economic, social, cultural and ethnic factors

(d) students registered in first year in a trimester program in the Winter or Spring Term at the University of Guelph who leave Ontario Year 5 studies before the end of the normal school year with the permission of the high school principal.

(e) in 1980-81 but not thereafter, students registered in preliminary years at Carleton, Ottawa and Windsor and in first year directly from Grade 12 at Brock University.

3.5 Students enrolled in programs in theology at those institutions which have not met the criteria outlined by the Minister in his letter

of June 26, 1975, and who are enrolled in programs of study introduced after September 1, 1967, or, which were ineligible for support under the former federal scheme of grants for universities and colleges (for further detail, refer to Section II(2)).

3.6 Graduate students in programs of study that have not been favourably appraised by the Ontario Council on Graduate Studies (i.e. Ph.D. programs established after January 1, 1969 and Master's programs established after July 1, 1967.)

3.7 Graduate students in new programs subject to the embargo on new graduate programs (i.e. all programs without enrolment prior to May 1, 1971, except those designated by MCU as exempt from the embargo).

3.8 Graduate students for whom the maximum of claimable BIUs has been claimed prior to the term being reported on. (Students who will exceed the maximum as a result of the term being reported on should be claimed as eligible at the full entitlement and adjustment made by means of the minima/maxima provisions, as explained in Section II(5).

3.9 Graduate students who are registered but inactive. This would include students working on their thesis and not making substantial demands on the resources of the institution.

4. <u>Permissible Changes in Actual and Projected Enrolment Reports</u>

4.1 Report on Actual Enrolment

A University must bear the adverse consequences of its own errors in enrolment reporting, but

will suffer no loss in respect of enrolment under-reported if the situation arose because of an oversight on the part of the Ministry.

In submitting reports of actual enrolment, it is the responsibility of the universities to see that no eligible students are unclaimed. Only in the most exceptional circumstances will upward adjustments be considered for claims made after the due dates for enrolment reports.

4.2 Enrolment Projections

Changes made by universities to their projections after the due dates, should be communicated to the Ministry, as soon as they are known; they will then be advised whether or not the changes are to be regarded as amendments to official university projections. In general, changes received more than 3 weeks after the due date will not be accepted.

IV ENROLMENT AUDIT

The following is a general description of the kind of enrolment audit required for institutions eligible for support under the Ontario Formula for Operating Grants and under the Program of Support for Church-Related Universities and Colleges.

1. The objective of the examination shall be to render an audit report in the prescribed form. If the auditor, based upon the results of the examination, is unable to complete the prescribed report without qualification(s) then he/she shall report these findings to the Deputy Minister of Colleges and Universities explaining fully the circumstances involved, and will await further direction as to how to proceed with the examination.

   If, on the other hand, the auditor is able to complete the audit report without qualification (because adequate assurance has been obtained from the audit work that the upper limit of errors throughout the enrolment reports does not exceed the materiality limit), it will not be necessary to disclose any known or projected errors to the Ministry; reporting requirements will, in these circumstances, be fully met by the submission of a signed audit report in the prescribed form.

   It is recognized that during the course of his examination the auditor may wish to seek clarification or direction in regard to such matters as ambiguities arising from applying the categorization scheme. Clarifications and interpretations of the formula for operating grants are the responsibility of the Ministry. If, therefore, the auditor wishes to consult, or to seek clarification or direction with respect to the examination, it should be done in

writing to the Assistant Deputy Minister, University Affairs Division, of the Ministry of Colleges and Universities.

2. The Ministry of Colleges and Universities will provide the following to the auditor of each institution.

   2.1 A summary of enrolment data received from the institution. (The auditor to confirm with the president and enrolment reporting officer their acceptance of it as a correct summary of the institution's enrolment data)

   The enrolment data submitted will have been carefully reviewed and their arithmetical accuracy proven. Changes, if any, to the data submitted will have been noted and agreed to by the reporting institution.

   2.2 An updated version of the manual on the operating grants formula and instructions for the completion of the enrolment reports.

3. The auditor of each reporting institution will provide the Deputy Minister of Colleges and Universities with an enrolment audit report and will provide a copy of all correspondence in this connection to the President (or his equivalent) of the university or college concerned. This report is to be submitted not later than December 31st following the conclusion of the academic year concerned.

4. Each university or college must formally advise the firm of public accountants retained by it that an audit of enrolment is a condition for payment of enrolment-related operating grants and that the

required examination for this purpose has been authorized. A copy of this letter should be forwarded to the Ministry, where it will serve as authorization for direct communication with the auditors.

5. Scope of, and Suggested Procedures for, the Audit of Enrolment.

During the course of the examination the Auditor will:

5.1 Carry out a general review of student records and related procedures to ensure their adequacy for satisfactory completion of the enrolment reports.

5.2 In consultation with University officials concerned:

(a) Inquire into, and determine reasons for changes between enrolment forms as submitted and as approved by the Ministry of Colleges and Universities. Note any procedural weaknesses and ensure the institution has taken appropriate action to prevent their recurrence.

(b) By direct inquiry, determine any areas of ambiguity encountered in applying the formula categorization scheme. List any enrolment situations for which the formula categorization scheme does not provide explicitly, and cite the authority for the manner in which this matter has been dealt with by the institution.

At the conclusion of the audit obtain a certificate (in the prescribed for - see Appendix A) from the registrar of the

institution attesting that (except as noted) enrolments in all programs of study offered fall within the formula categories under which they have been included.

In addition, this certificate will declare that all enrolment reported is eligible for purposes of determining grant assistance except as noted in the certificate.

5.3 Reconciliation to academic fees per audited financial statements.

Obtain and check a schedule which satisfactorily reconciles (to the extent considered necessary) total fees computed, using reported enrolment data and the fee schedule of the institution, to academic fees as reported on the audited financial statements.

5.4 Examination of records and enrolments reports.

Determination of appropriate procedures, scope and extent of testing is, of course, acknowledged as a responsibility of the auditor.

With respect to the detailed examination of enrolment reports and related student records, the existence or non-existence of an adequate audit trail will each call for a different audit approach.

Where enrolment summaries of the students in each category total permit the identification of individual students comprising this total (that is, an adequate audit trail exists) then it is apparent that procedures involving only tracing from the records to the reports, and vice versa, will be adequate.

> Under these circumstances, the auditor may wish to make use of either statistical sampling methods or judgemental testing procedures in determining the audit program appropriate in the circumstances.

To provide guidance with respect to statistical sampling techniques as they might apply to the audit of enrolment, Appendix B, which consists of extracts from a letter addressed to Mr. F. J. Kidd and dated October, 1972, from the Toronto Office of Clarkson, Gordon & Co., Chartered Accountants, is attached.

For purposes of this scheme for the audit of enrolment, statistical sampling techniques predicated upon a materiality limit of 2% (with respect to the 'upper error limit' of net overstatement), coupled with a 95% degree of sampling confidence will be acceptable. That is, the statistical results yielded by a random sample must be such as to give the auditor at least 95% confidence that the total BIUs reported on the year's enrolment reports are not overstated by a net amount of more than 2%. If such statistical results are unobtainable because of the frequency of errors observed in the courses of the audit work, then an unqualified certificate should not be given (Section IV.1 indicates what action should be taken by the auditor, in this situation).

If, instead, judgemental testing procedures are employed, the auditor should be satisfied that the audit tests of BIU records provide adequate evidence that the upper limit of net overstatement error does not exceed 2%. In any event, a sample containing no errors should not be less than 150.

As illustrating an appropriate audit examination where no adequate audit trail exists, the following procedures might be considered:

Basis of test: According to the standards of confidence and materiality suggested above, and checking at least one enrolment category in each major enrolment classification (full-time undergraduates, part-time undergraduates, full-time graduates and part-time graduates):

From enrolment reports to records and from records to enrolment reports -

Account for all students reported, as at the reporting date, under the category selected:-

(a) Examine individual student records checking all details relevant to the categorization and eligibility of the student.

(b) Determine that the applicable academic fee has been assessed to each student.

(c) List and investigate all apparent discrepancies under (a) or (b).

5.5 Foreign Student Formula Fees

Section 1.7 contains a full description of the policy regarding this fee. For the administration of this policy and for audit purposes, procedures followed by the institutions should include:

(i) Obtaining a certificate signed by each student at time of registration attesting to his or her exemption (a note should appear on the certificate warning of the penalty for false declaration).

(ii) Taking whatever steps are feasible in the circumstances to verify the accuracy of the above certificates.

To achieve (ii) above, students with a social insurance number (SIN) beginning with "9" may be new foreign students and subject to the fee. Where students have no SIN, other documentation will be required.

The auditor should ask for evidence that the above procedures are operational and adequate to ensure proper implementation of the policy.

6. Extension to the Scope of the Audit

After 1968-69, the first year for enrolment audits, the introduction of revised methods and procedures for

establishing formula units at the graduate level (described in Appendix C) gave rise to the need for some extension to the scope of, and suggested procedures for, the audit of enrolment.

6.1 Appendix C, Part I, entitled "Audit Implications" - lists some possible audit test procedures for use in connection with the revised methods and procedures for establishing formula entitlements at the graduate level.

6.2 Appendix C, Part II is a certification of graduate student status and eligibility for formula operating grant support (this to be used for "verifying" some of the less auditable criteria).

7. Form of the Audit Report

'We have examined the attached enrolment reports of (name of institution) totalling ..... basic income units and formula fees of $ ..... for the academic year 19--/--which have been submitted to us by the Ministry of Colleges and Universities.

Our examination included a general review of the records and procedures by which the above enrolment reports were prepared and such tests of the records of (name of institution) and other supporting evidence as we considered necessary in the circumstances.

In our opinion, these enrolment reports present fairly the weighted enrolment and formula fees of (name of institution) for purposes of determining its Government of Ontario formula operating grants for the 19--/19-- session.'

_____

Auditor

8. FORM OF CERTIFICATION IN CONNECTION WITH AUDIT OF ENROLMENT

Appendix A

UNIVERSITY LETTERHEAD

Registrar's Certification in Connection with Audit of Enrolment

TO: (Name of Auditors)
(Institutions) (Session)

Dear Sir:

In connection with your examination of the enrolment reports for (session) submitted to the Ministry of Colleges and Universities and the records from which these have been prepared I hereby certify that to the best of my knowledge and belief:

1. That all records have been maintained in a manner consistent with the internal university procedures established for the compilation of enrolment data and that the figures shown on the enrolment reports agree with these records.

2. That there is explicit authority for inclusion of enrolments in all programs of study offered by the university within the formula categories under which they have been reported, except as noted below:

3. That all students ineligible for support under the provisions of the Ontario Formula for Operating Grants have been excluded in determining the operating grant which has been paid.

The numbers of such students and the programs of study in which they are enrolled are as noted below.

4. That all relevant instructions and provisions applicable to the completion of the enrolment reports and the determination of the operating grants have been correctly followed.

Yours truly,

_____

_____

Title

To be signed by Registrar (or such other university official as is responsible for completion of MCU Enrolment reports).

Appendix B

9. Extracts from a letter dated October 18, 1972 from Clarkson, Gordon & Co. to Mr. F. J. Kidd, on the subject of the application of statistical sampling techniques to enrolment auditing.

Background

An auditor does not and cannot "certify to the accuracy" of figures in a financial statement (or enrolment report) first because the accounting principles governing its preparation always require judgement in application and secondly because it is usually completely impractical for the auditor to check 100% of the underlying transactions. Instead, the auditor bases his examination on tests guided by analyses of the figures, internal reconciliation of balances, review of internal control, and so on and then reports, if appropriate, that "in his opinion" the financial statement (or enrolment report) "presents fairly" the financial position or other information required (such as the "weighted enrolment").

The words "in his opinion" imply that the auditor cannot provide 100% certainly but rather a reasonable degree of confidence as a result of his audit work. The words "present fairly" imply that the auditor cannot report that the financial statement (or enrolment report) is accurate to the cent but rather that (subject to the reasonable degree of confidence mentioned above) it is not mis-stated by a material amount. Any audit therefore implies a choice of confidence level and materiality limit. Such choices are made implicitly when an auditor employs judgemental testing procedures (he intuitively decides how much he must test to be reasonably sure of

detecting a material error if present). When an auditor employs statistical sampling procedures, however, the choice of confidence level and materiality limit (which in turn determine sample size) must be made explicit.

The Ministry has stated that for the purposes of the enrolment audit the university auditor may employ either statistical sampling techniques or judgemental testing procedures. Where the nature of the enrolment records, however, permits the application of statistical sampling techniques most university auditors will wish to consider such application seriously because of the benefits of greater objectivity to be derived therefrom. The following material is intended to indicate a method of applying such techniques.

Prescription of confidence level and materiality limit

The Ministry has prescribed a sampling confidence level of 95% and a materiality limit of 2% (with respect to the upper limit of net overstatements) where the university auditor employs statistical sampling procedures in arriving at an opinion on the reported "weighted enrolment".

There are various different components of a complete enrolment audit: studying the system of internal control, reconciling reported academic fees to reported enrolment, sampling records of 'basic income units' (BIUs) to verify 'weighted enrolment' reflected in the year's enrolment reports, etc. The following material, however, addresses itself exclusively to the statistical sampling of BIU records to verify the year's enrolment reports.

Statistical sampling of BIUs

What is required is a statistical sample of BIU records that will yield 95% sampling confidence that total BIUs reported on the year's enrolment reports have not been overstated by More than 2%[1].

Since the objective of the audit test is to assess the frequency of net overstatements in total reported BIUs, the direction of the audit test must clearly be from the reported BIUs back to underlying enrolment records.

The first question is whether the auditor should select a random sample of students or a random sample of BIUs (in the former case every student would have an equal chance of selection while in the latter case every BIU would have an equal chance of selection). If the former method is chosen the auditor will be able to arrive at a statistical conclusion that X% of the student records may contain BIU overstatements. The auditor will not, however, be able to convert this conclusion into a rigorous statistical conclusion with respect to total BIUs themselves.

If the X% of overstated student records were or might be mostly graduate students, then total BIUs might well be overstated by far more than X% (since each graduate student overstatement might be an overstatement of several BIUs). It is possible that additional judgemental testing (particularly among graduate records) may still permit the auditor in such a case to arrive at a reasonable judgemental conclusion. Nonetheless, it is desirable, where feasible, to obtain a statistical conclusion directly relating to reported BIUs and this can be done by drawing a statistical sample of BIUs.

The first point is, therefore, that it is desirable for the auditor to draw a random sample of BIUs: that is, every BIU among the total reported BIUs should have an equal chance of selection in the audit sample.

Such a procedure will, for example, give somewhat more chance of selection to graduate students than to undergraduates but this is appropriate since, in terms of BIUs, each of the former has a greater potential for overstatement than each of the latter.

Mechanics of drawing a statistical sample of BIUs:

Pure random sampling involves making a new random draw on each selection. A far less cumbersome procedure, however, is to use 'systematic' or 'interval' sampling whereby the auditor selects every nth BIU throughout the population. This requires two things:

(1) that the auditor can identify a set of BIU records (the 'population') that he has added (or will add) and agreed (or will agree) in total to the total BIUs reported on the year's enrolment reports, and

(2) that he can by some method count through this population of BIUs in order to select every nth one.[2]

For example, if the total population amounts to 4,000 BIUs and the auditor has estimated that he will need a sample of 400 BIUs (sample size determination is discussed below) he would want to select every 10th BIU throughout the entire population. The counting through the population to pick every 10th BIU may be able to be done manually (if the BIU records exist on visible accounting reports) or by computer (if the BIU records exist on computer files).

There is a risk that 'interval sampling' may contain a bias (if there is any periodicity or clustering in the pattern of errors throughout the population). For this reason, it is desirable for the auditor to use either 'randomly varying intervals' (the better method) or 'fixed intervals following several random starts'.

With the preferable method of 'randomly varying intervals' the auditor would use a stream of random intervals (obtained either from random number tables or a computer program) averaging to the desired average interval. For example, in the case above, if the auditor wishes 400 selections out of 4,000 BIUs he needs to select at an average interval of 10, but the specific intervals would vary randomly above and below 10 (e.g. he might count along 7 for the 1st selection point, another 15 for the 2nd, and so on). One method of obtaining varying intervals averaging to 10, for example, is to pick random numbers between 1 and 20 (twice the desired average interval), which, if enough are selected, will be bound to average to close to 10.

If, however, the auditor uses fixed intervals, he should take several random starts. One method (still using the above example) is to pick 3 random starts each between 1 and 30 at the very beginning of the population and then fixed intervals of 30 after each of these starts (producing in total about 400 selections). Another method is to pick a random start between 1 and 10 at the beginning of each third (or smaller division) of the population followed by fixed intervals of 10 thereafter throughout that division of the population. These methods are generally considered acceptable but the method of varying intervals described in the previous paragraph is to be preferred.

Evaluation of a Statistical Sample of BIUs:

The evaluation of statistical samples will now be discussed and, following that, the planning of required sample size.

Suppose, temporarily, that a university consisted solely of students having 1 BIU each and that the only errors discovered by the auditor were instances where the student should not have been included at all (i.e. each discovered error represented a 1 BIU overstatement).

Statistical attribute sampling tables for 95% confidence (the confidence level prescribed by the Ministry) indicate the following:

For 95% confidence[3]

Number of errors found in sample	'Upper error limit' factor
0	3.00
1	4.75
2	6.30
3	7.76
4	9.16
.	.
.	.
.	.
.	.
.	.

where:

$$\text{'upper error limit' frequency} = \frac{\text{'upper error limit' factor}}{\text{sample size}}$$

For example,

if 0 errors found in a sample of 100,

$$\text{U.E.L.} = \frac{3.00}{100} = 3.00\%$$

if 1 errors found in a sample of 100,

$$\text{U.E.L.} = \frac{4.75}{100} = 4.75\%$$

if 3 errors found in a sample of 400,

$$\text{U.E.L.} = \frac{7.76}{400} = 1.94\%$$

Evaluation for varying error sizes

In practice, of course, a university does not consist solely of students having 1 BIU each but rather some having 1, some 4, some 2.5, etc. Suppose that, in drawing the statistical sample of BIUs, one particular BIU selected happens to fall within a student enrolment record for 4 BIUs. Of course, the auditor cannot verify merely the 1 BIU selected but rather must verify the whole student enrolment record of 4 BIUs. If this whole student record proves to be correct, then obviously the selected BIU therein must be correct too (and accordingly no sample error should be scored for this item). On the other hand if the whole student record proves to be fictitious, then obviously the selected BIU therein is 100% fictitious too (and accordingly a sample error of one 100% fictitious BIU should be scored). If all selected BIUs turned out to be completely right or completely wrong then the table values above could always be used to project the 'upper error limit' of completely fictitious BIUs throughout the population (and this would represent the 'upper error limit' of overstatement in total reported BIUs).

However, in the above example, the auditor may find that the student enrolment record of 4 BIUs should properly have been recorded as 2 BIUs. In this case, the student enrolment record has been overstated by 50% of its reported value. It is logical then to consider each of the 4 reported BIUs (including the one selected BIU therein) as being "tainted" by a 50% overstatement error. In such a case, then, a sample error of one 50% overstated BIU should be scored.

Tainting percentages under 100%

How is such a 50% overstated BIU discovered as the only error, say, in sample of 100, to be projected? Referring to the previous table a sample of 100 containing 1 error

had a UEL of 4.75%. It follows, in a sample of 100 containing no 100% errors and one 50% error, that 100% errors (0 found in sample) have a UEL of 3.00%, while 100% and 50% errors together (1 found in sample) have a UEL of 4.75%. If can be readily shown that the most conservative way of combining these two rigorous statistical conclusions is to attribute a 3.00% possible frequency to 100% errors and the remaining 1.75% possible frequency to 50% errors.

The net UEL would therefore be computed as follows:

Errors found	'Tainting %'	UEL incremental factor		Product	Sample size	Net UEL
0	100% X	3.00	=	3.00		
1st	50% X	1.75	=	.88		
		4.75				
				3.88	- 100 =	3.88%

To permit such computation to be done when several different errors are found, a table of UEL incremental factors is desirable as follows:

for 95% confidence[4]

Errors found in sample, ranked in declining tainting percentage	'Upper error limit' incremental factor
0	3.00
1st	1.75
2nd	1.55
3rd	1.46
4th	1.40
5th	1.36
6th	1.33
7th	1.30
8th	1.29
9th	1.27
10th	1.26
11th	1.24
12th	1.24
13th	1.22
14th	1.22
15th	1.21

Where:

'upper error limit' frequency value = $\frac{1}{\text{sample size}}$

X 3.00 X 100%
+1.75 X tainting % for 1st error
+1.55 X tainting % for 2nd error
+ etc.

and where:

tainting % of an error = $\frac{\text{amount of error (in BIUs)}}{\text{reported BIUs for that student record}}$ X 100%

For conservatism, it is necessary to rank the errors in order of declining tainting % (as indicated above) since the UEL incremental factors are larger for the early errors. Note that the zero line is always scored at 3.00 X 100% since, even if no 100% errors are found in the sample, overstatement errors as large as 100% each (though no larger) could exist in the population.

Offsetting overstatements and understatements

The above procedures should be applied solely to errors of overstatement discovered in the audit sample. The logic is that individual errors of understatement cannot possibly aggravate any total overstatement and therefore in projecting individual errors of overstatement it is perfectly safe for the auditor simply to ignore any individual errors of understatement. If the gross UEL overstatements projected on the foregoing basis amounts to 2% or less then the auditor is in a position to give an unqualified opinion without consideration of the possible offsetting effect of any understatements.

Cases may arise, however, where the gross UEl of overstatements exceeds the 2% limit and yet it is most unlikely that the net overstatement could be this high because of the offsetting effect of understatement errors. It can be shown statistically that it is proper to deduct from the gross UEL of overstatement errors the MLE ('most likely error' rate) of understatement errors.[5]

The 'most likely error' of understatement (to be deducted above) is equal to the sum of the tainting percentages of individual understatement errors discovered in the audit sample divided by the sample size.

Summary of evaluation procedure

The above procedures can be summarized as follows:

1. after the BIU selection points have been identified throughout the population of reported BIUs, verify the student record in which selected BIU falls.

2. For each selected BIU determine a tainting % as follows:

$$\text{Tainting \%} = \frac{\text{amount of error (in BIUs)}}{\text{reported BIUs for that student record}} \times 100\%$$

3. Rank the overstatement errors in order of declining tainting % and compute the gross UEL of overstatements as follows:

$$\text{gross UEL of overstatements} = \frac{1}{\text{sample size}} \times \left[\begin{array}{l} 3.00 \times 100\% \\ + 1.75 \times \text{tainting \% for 1st error} \\ + 1.55 \times \text{tainting \% for 2nd error} \\ + \text{etc.} \end{array} \right]$$

using the previous table.

4. Compute the most likely error of understatement as follows:

$$\text{MLE of understatement} = \frac{1}{\text{sample size}} \times \left[\begin{array}{l} \text{tainting \% for 1st error} \\ + \text{tainting \% for 2nd error} \\ + \text{etc.} \end{array} \right]$$

5. Compute upper error limit of net overstatement as follows:

	gross UEL of overstatements
-	MLE of understatements
=	net UEL overstatements

6. Compare the net error limit of overstatements to the 2% materiality limit prescribed by the Ministry.

7. If the net UEL of overstatement is 2% or less, the auditor is in a position to give an unqualified opinion as far as this portion of the audit is concerned (although, of course, the results of other audit work such as the review of internal control, the reconciliation of academic fees, etc. must be assessed judgementally as well).

8. If, on the other hand, the net UEL of overstatement exceeds 2% the auditor is not in a position to give an unqualified opinion. He should then consider the desirability of extending his sample size (this is discussed below). If, however, it seems clear that no amount of sample extension will lead to an unqualified opinion then he must report his findings to the Ministry.

Suggested audit working paper

The audit working paper form shown on the following page can be used to record the statistical evaluation according to the foregoing procedures and contains an example answer to illustrate its use.

In the example illustrated, the auditor discovered four overstatement errors and two understatement errors in his sample of 300 BIUs. The 'most likely' errors are 0.83% overstatements and 0.50% understatements, for a net 'most likely error' of 0.33% overstatements. The university records are probably overstated by only this small 0.33% rate. However, they might, subject to 95% confidence, be overstated by a net amount of as

ENROLMENT AUDIT

WORKING PAPER FORM FOR EVALUATING STATISTICAL SAMPLE OF 'BASIC INCOME UNITS'

A	B	C	D	E	F	G	H	I	J
Identification No. of student records found to contain BIU errors	As reported	Should be	amount understated	amount overstated	Understatements $\frac{D}{B}$ x 100%	Overstatements $\frac{E}{B}$ x 100%	Rank of overstatement errpr (in declining tainting %)	UEL incremental factor for this rank of error (per below)	Tainting % x UEL incremental factor (G x 1)
							0	3.00	3.00
A 423	4	3		1		25%	4	1.40	.35
F 218	2	3	1		50%				
L 106	1	0		1		100%	1	1.75	1.75
M 247	3	1.5		1.5		50%	3	1.46	.73
R 351	1	2	1		100%				
S 067	4	1		3		75%	2	1.55	1.16
TOTALS					150%	250%			6.99

Table of Factors for 95% Confidence

Errors found in sample, ranked in declining tainting percentage	'upper error limit' incremental factor
0	3.00
1st	1.75
2nd	1.55
3rd	1.46
4th	1.40
5th	1.36
6th	1.33
7th	1.30
8th	1.29
9th	1.27
10th	1.26
11th	1.24
12th	1.24
13th	1.22
14th	1.22
15th	1.21

÷ ÷ ÷

300 ← 300 ← Sample size → 300

under over

'Most likely error' MLE: 0.50% | 0.83%

0.50% → less MLE of understatement: 0.50%

Net MLE of overstatement: 0.33%

Gross UEL of overstatement: 2.33%

Net UEL of overstatement 1.83%

compare to:*

Prescribed materiality limit 2.00%

*If net UEL of overstatement exceeds materiality limit auditor must either
(a) extend sample size and re-evaluate
or (b) report why unqualified opinion is impossible

much as 1.83% (the net UEL of overstatement). Since this net UEL does not exceed the prescribed materiality limit of 2%, the auditor (subject to the completion and assessment of his other audit work: internal control review, academic fee reconciliation, etc.) is in a position to give an unqualified opinion. Had the net UEL, on the other hand, exceeded the 2% limit, he would have had to consider the possibility of sample extension.

Sample extension

Suppose that in the foregoing example the auditor's sample of 300 had instead contained 3 100% overstatement errors and no understatement errors. The statistical evaluation in this case would have worked out to the following:

MLE of overstatement: $\frac{300\%}{300} = 1\%$

UEL of overstatement: $\frac{7.76}{300} = 2.59\%$

Here the situation is that while the overstatement of reported BIUs is probably only 1% (which would be acceptable) it might subject to 95% confidence be as high as 2.59% (which is unacceptable). Based on the audit work done to date the audit is not in a position to give an unqualified opinion. On the other hand, there is a reasonable indication that the population error is not material (i.e. not as high as 2%) and that a larger sample size will be able to prove this. In such a situation the auditor should extend his sample size by drawing additional items from the population.

Suppose he draws an additional 300 BIUs and finds a further 3 100% overstatement errors therein (the same error frequency as in his initial sample). He now has a total sample of 600 BIUs containing 6 100% overstatement errors. It is appropriate to evaluate this expanded sample of 600 in exactly the same way as already described. The statistical evaluation of the 600 sample would work out to the following:

MLE of overstatement: $\frac{600\%}{600} = 1\%$

UEL of overstatement: $\frac{11.85}{600} = 1.98\%$

It might be noted that the MLE of 1% has not changed but the UEL has been reduced from 2.59% to 1.98% and is now acceptable (as being less than the prescribed 2% materiality limit). Based on the expanded audit work now completed, the auditor is in a position to give an unqualified opinion (always subject to completion and assessment of other audit work: internal control review, academic fee reconciliation, etc.).

In general, extending the sample size should not be counted on to change the MLE (though in any particular case it may in fact change it either up or down) but it can be counted on to reduce the precision gap between the MLE and the UEL, and thus usually to reduce the UEL. A greater amount of audit work permits a more precise answer and so the precision gap between the MLE and the UEL, and thus usually to reduce the UEL. A greater amount of audit work permits a more precise answer and so the precision gap between the MLE and the UEL is narrowed.

The UEL will of course always exceed the MLE (there will always be some precision gap however large the sample size). Therefore, if in the auditor's preliminary sample of 300 he had discovered 7 100% overstatement errors - for a MLE of 2.3% and a UEL of 4.4% - there is no point in the auditor extending the sample size. The MLE projected from any extended sample is likely to remain in the neighbourhood of 2.3% and the UEL will be even higher than this. There is therefore little prospect of bringing the UEL down to 2% and thereby obtaining an acceptable conclusion. Indeed, if the initial work indicates that a material error (over 2%) probably does exist and it is unlikely that extended work will provide 95% confidence that a 2% error does not exist, the auditor should not extend the sample but proceed immediately to report to the Ministry.

Guide as to sample extension

The following table can be used as a guide in deciding to what extent an initial sample should be extended (if any extension is appropriate at all).

For 95% confidence[6]

Sample Size	Number of 100% over-statement errors found in sample (assuming no under-statement errors found)	MLE (=sample error rate)	UEL
150	0	0.00%	2%
240	1	.42	2
320	2	.64	2
390	3	.78	2
460	4	.88	2
520	5	.94	2
590	6	1.02	2
660	7	1.06	2
720	8	1.10	2
790	9	1.14	2
850	10	1.18	2

To use the previous example, if the auditor had found a 1% sample error rate in an initial sample of 300 (say, 3 100% errors), it would be reasonable to extend his sample size to 590 (or about 600) since the above table shows that if the 1% sample error rate continues the same when he extends his sample (which is the most likely event) then a sample of 590 is needed before a sample error rate as high as 1% yields a UEL of the desired 2%.

The above table can only, however, be an approximate guide because:

(a) the table is only in terms of 100% errors
- this gives the worst situation
- the situation is not as bad if an equivalent value of smaller errors is found instead
- for example, in a sample of 100:
  - one 100% error yields an MLE of 1% and a UEL of 4.75%
  - but two 50% errors yield an MLE of 1% but a UEL of only 4.65%

(b) the table is only in terms of overstatement errors
- the situation is slightly worse if the equivalent net value of sample errors is made up instead of offsetting overstatements and understatements
- for example, in a sample of 100:
  - 1 1% overstatement sample error frequency yields a UEL of 4.75%
  - but a net 1% overstatement sample error frequency made up of 2% overstatement offset by 1% understatements yields a net UEL of 5.30%.

Nonetheless, use of this table will give a general indication of the extent to which the sample size should probably be increased. Of course, if the sample error rate found in the initial sample is, say 1.6% it may be uneconomical to increase the sample (since a total sample of well over 1,000 items would be required) and a report under section IV.I, paragraph 1 may be preferable.

Note that when a sample is extended the results of the initial sample must not be discarded but rather incorporated into the total cumulative sample. The cumulative sample (initial stage plus extension) must then be re-evaluated using the same procedures as outlined previously.

If a sample is extended from, say 400 to 600, it is also important that the additional 200 selection points be drawn randomly out of the whole population. The mechanics of drawing the additional 200 items are the same as for the first 400 (except, of course, a different average sampling interval is involved). In fact, if there appears to be a reasonable possibility that sample extension may be required, the full 600 points can be identified in the first place (to avoid the need to go back and count through the population of BIUs a second time). In such a case, the initial sample of 400 would be randomly selected out of the 600 identified selection points (perhaps by omitting every third one), the initial sample of 400 verified, and the additional 200 selection points only examined should the initial sample of 400 prove unacceptable.

Planning the initial sample size

The same table presented above as a guide for sample extension can also be used for planning the initial sample size. Referring to this table, it is clear that the initial sample must be no less than 150 items (since a sample of 150 items barely yields a 2% UEL if no sample errors are found). It would, however, generally be imprudent to choose an initial sample size as low as 150 since at this size the discovery of even one error however small, will render the conclusions unacceptable and necessitate sample extension.

Previous years' audit results will obviously be the best guide. For example, if past sample error rates have varied between 0 and 0.6% a sample size of about 300 would seem a prudent choice. Of course, there is always the chance that the current year results may turn out worse and the 300 prove inadequate. In such a case however, the auditor can proceed to extend his sample size (rather than examining an excessive sample size to start with).

It should be stressed that while estimating the required sample size is always an uncertain business (involving, as it does, the anticipation of what sample error rate may be encountered), this uncertainty doe not attach to the final statistical evaluation. Once a sample has been chosen, verified and the sample error rate determined, an objective statistical conclusion can be drawn based on the evaluation procedures described earlier.

Summary of BIU statistical sampling steps

The above procedures for conducting a statistical sample of BIU records can be summarized as follows:

1. Based on prior years' observed error frequencies (or any indications of the current year's frequency) choose an adequate sample size (greater than 150) by reference to the sample extension guide.

   For example, if prior years' observed error frequencies have been in the range of 0 to 0.6%, an initial sample size of about 300 would usually be a prudent choice.

2. If there is a reasonable possibility that subsequent sample extension might prove necessary choose (by reference to the guide) a gross sample size larger than #1. Determine all the gross sample selection points counting through the BIU population either manually or by computer (see above discussion on sampling mechanics). Select the initial sample (#1) out of the gross sample selection points (e.g. by selecting every other one, or every third, etc.).

3. Verify the initial sample and determine the tainting percentages of any individual errors of overstatement or understatement discovered therein.

4. Compute the statistical conclusion arising from the initial sample results by completing the working paper

form on page 60. Compare the net 'upper error limit' of overstatement to the prescribed 2% materiality limit.

5. If the net UEL of overstatement does not exceed 2% the auditor is in a position to give an unqualified opinion (subject to the completion and assessment of other audit work: internal control review, academic fee reconciliation, etc.).

6. If the net UEL of overstatement exceeds 2% but the net MLE of overstatement is significantly less than 2% (say, not much in excess of 1%) then there is every indication that an acceptable conclusion will be able to be reached through sample extension. Based on the sample error rate observed in the initial sample, and by reference to the sample extension guide, choose the extended sample size likely to be required.

7. Select additional sample items randomly (either from the population directly or from the additional gross sample selection points already held in reserve in #2) to increase the cumulative sample size up to the extended size chosen in #6. Verify these additional sample items. Re-evaluate the whole extended sample by re-completing the working paper form. Compare the new net 'upper error limit' of overstatement to the prescribed 2% materiality limit. The process of sample extension can be continued in this manner until an acceptable conclusion is reached or until it becomes evident that no acceptable conclusion is possible.

8. Where the MLE of overstatement (of either the initial or extended sample) exceeds 2% or where it is only slightly under 2% (e.g.1.6%, 1.8% etc.) it is unlikely that any acceptable conclusion will be able to be reached through sample extension (or further sample extension). The auditor should therefore report his findings in such a case to the Ministry as called for in section IV.I, paragraph 1.

Investigation of nature of errors discovered

This appendix has been directed exclusively to the drawing of a statistical conclusion based on the frequency of errors observed in a sample of BIUs. None of the statistical work should, however, limit the auditor from evaluating judgementally any other evidence available from the audit work. In particular, it is desirable that the auditor investigate the nature of any errors discovered in his audit sample. If any errors discovered in the sample appear to be systematic in nature, the auditor may well wish to perform additional judgemental audit steps to assess the likely extent of such systematic errors over and above his statistical sample projections of upper error limits.

Combination with other audit conclusions

The statistical projections described in this appendix relate to the projection of a possible error frequency among the population of BIU records and the comparison of this upper error limit with the 2% materiality guideline. Of course, if other known errors are discovered outside the BIU records being subjected to sampling the effect of these known errors should be added to the statistical 'upper error limits' and the total compared to the 2% materiality guideline. For example, if an overstating addition error of 0.5% was discovered in the summarization of the total BIU figure reported on the enrolment reports and, on top of this, the statistical upper error limit for overstatements among the individual BIU records was 1.9%, the total combined 'upper error limit' would be 2.4% (and hence unacceptable without further work).

Other considerations

A number of other considerations may well arise in the conduct of any particular enrolment audit. For example, in some universities the net 'weighted enrolment' is reduced by certain cost-sharing percentages related to affiliated colleges. These cost-sharing percentages are themselves subject to audit and

such audit may likewise be performed using statistical sampling procedures. In the latter case it is desirable that the statistical conclusions regarding the gross reported BIU's and the statistical conclusions regarding the cost-sharing percentages be combined before comparison with the prescribed 2% materiality limit.

A discussion of this and other considerations is, however, beyond the scope of this appendix. The auditor who has had some training in statistical sampling techniques will be able to resolve such matters when they are encountered.

[1]Note: With respect to the specific prescribed guidelines of 95% confidence and 2% upper error limit, the Ministry's prescription requires only that these be applied to net overstatements. When, however, the auditor expresses an opinion that the "enrolment reports present fairly the weighted enrolment" he will normally want to satisfy himself in any event that there is reasonable confidence that neither a material overstatement error nor a material understatement error exists. The procedures described in this appendix should usually be adequate to give such reasonable assurance with respect to understatements as well as overstatements.

[2]Note: The mechanics of selecting every nth BIU are complicated if the BIU weights are applied manually at a summary level and are not readily available at a detail level. In some cases, this problem can be solved by stratifying the population into groups, students within each group having identical BIU weights. In a computerized system, however, these problems are not as great.

[3]Technical note: This table is based on Poisson Tables, and represents a slightly conservative (ie. safe) approximation to Binomial Tables (the rigorous values for attribute sampling from large populations). Additional conservatism arises when these values are used for very small populations (e.g. when 20% of the population has been covered in the sample) but the amount of this additional conservatism (from ignoring the 'finite population correction' factor) is slight. In any case, since both the above approximations are conservative, the values are safe for the auditor to use (i.e. if anything they will yield conclusions slightly more pessimistic than those the auditor is really entitled to as a result of his sampling). Further information as to the derivation of the above values statistically can be supplied to any interested party.

[4]Technical Notes:

1. This table represents merely the increments between successive values shown in the previous table. The derivation of the values is subject to the same technical note as the previous table.

2. The above method of evaluation by ranking tainted percentages is supported by Dr. Albert Teitlebaum of McGill University and also corresponds (except for differences in terminology) with that outlined in Chapter V of the Research Study, "Statistical Sampling in an Audit Context", published in March 1972 by the Canadian Institute of Chartered Accountants. It is possible to eliminate some of the conservatism inherent in this method by the use of a computer program, but such a refinement is usually not significant enough to be worthwhile.

[5]Technical note: For 95% confidence this statement is rigorous for populations consisting of up to 3.6% overstatements offset by 1.6% understatements. Even for 6% overstatements offset by 4% understatements the slight inaccuracy of the statement is not large enough to be of material consequence. Auditors should, however, avoid using the offsetting benefit of understatements when gross projected errors in both direction are each several times the 2% materiality limit.

[6]Technical notes:

1. This table is constructed from the previous tables to show what sample size and error combinations yield a 2% UEL.

2. Technically the values shown are only rigorous for one-stage samples. Where a one-stage sample of 590 is found to contain 6 errors there is 95% confidence with respect to a 2% UEL. Where a sample of 590 however, is drawn in two stages (say, 240 first plus a further 350 later) with a possibility of stopping at the end of the first stage (in this case if only 1 error had been found in the first 240), it can be shown statistically that there is a slight fall-off in confidence level (in the range of a few percentage points). That is, if 6 errors are found in total in the two-stage sample of 590, there is not quite 95% confidence with respect to a 2% UEL as indicated above. However, it can be shown that in the range of sample extensions likely to be employed by auditors, such fall-off is slight. Considering the judgemental nature of a choice of 95% confidence in the first place, and the complexities of the statistical refinements necessary to obtain a perfectly rigorous answer, this slight statistical inaccuracy should not be considered of significance.

REPORT ON THE COUNTING OF GRADUATE STUDENTS
AUDIT IMPLICATIONS

Reference Formula Manual Section No.	Evidence required that	Possible Audit Test Procedures
III 2.1 (a)(i)	Student has an honours undergraduate degree or equivalent	Examine transcript or other documentary evidence
III 3.6	Program of studies meets requirements of O.C.G.S. appraisals procedure	Where applicable, examine evidence of successful program appraisal
III 2.1 (a)(ii)	Student is making substantial demands on resources of the university	Obtain certificate (see form attached)
III 3.9	No units have been claimed for students registered but inactive	. . . . .
III 2.1 (b)(iv)	Student claimed as full-time geographically available and visits campus regularly	. . . . .
III 2.1 (b)(iv)	Student has not been absent for four weeks in any term without required approval	. . . . .
III 2.1 (b)(vi)	Student's employment, if any, does not involve more than 10 hours per week	. . . . .
III 2.1 (b)(v)	Student has not been employed outside the university except by supervisor's permission	. . . . .
III 2.1 (b)(ii)	Student identifies himself as a full-time graduate student	This should be verified by reference to student records (statement of intent, etc.)
II 5	Minima and maxima provisions have been adhered to:	(a) examine, on a test basis, units claimed during the academic year under these provisions (b) Assess the adequacy of records and procedures for the correct determination of these claims
General	Adequate records and procedures have been established for the counting of graduate students for entitlement purposes.	Review of internal control

Appendix C
- Part II

CERTIFICATION OF GRADUATE STUDENT STATUS AND ELIGIBILITY FOR FORMULA OPERATING GRANT SUPPORT

To: (Name of Auditors) _____ Term of 19 ____ 19 ____ Session

Name of Student
Claimed for support: _____ Program of Study: _____

Status reported Full-time ☐ Part-time ☐

	Yes	No
(i) This student made substantial demands upon the resources of the university (i.e. either the student was registered in a regular course of study or was actively engaged in writing a dissertation under continuing supervision).	____	____
(ii) For students accorded full-time status:		
(a) Apart from approved absence (see Item (b) above)) was student geographically available and did he visit the campus regularly?	____	____
(b) If the student was absent from the university for a period exceeding four weeks, was such absence approved as required?	____	____
(c) Was it satisfactorily established that the employment restrictions in regard to the student being claimed for entitlement were complied with?	____	____

Appendix D

ON STUDY ABROAD PROGRAMS AND COURSES

(To be submitted for audit purposes
by responsible deans to Registrar)

1. University offering program/course _____ Fiscal year _____

2. Name of program/course _____

3. Category:
   _____ Study abroad program
   _____ Study abroad course
   _____ Exchange program (under formal agreement)

4. Recognized by Senate for credit when? _____ Ref: _____

5. Designed as an integral part of what degree program? _____

6. Program level (year of study): _____

7. Length of program/course (in weeks): From _____ To _____

8. What is the duration of the program/course in student contact hours? _____
   Is this at least equal to the contact hours for comparable programs/courses (specify below) offered on campus in Ontario during the same session? _____ Yes _____ No.

9. Courses offered abroad: _____ NAME _____ _____ NUMBER _____

10. Location offered (country/city): _____

11. In what year was this program/course started? _____

12. If started before 1981, was MCU approval for formula funding obtained? _____

13. Briefly explain why a foreign locale is essential for this program/course:

14. If this is an exchange program under the terms of a formal exchange agreement give:
    (a) Name and date of agreement: _____
    (b) A brief description of its terms:

    (c) Name of (each) other participating university:

    (d) No. of foreign students in Canada on this exchange (append list of their names) _____
    (e) No. of students from your university abroad on this exchange (append list of their names) _____
    (f) No. of FTE's claimed for formula grants _____
    (g) No. of BIU's claimed for formula grants _____

15. If this is not an exchange program give:

    (a) No. of Ontario students enrolled in this study abroad program or course who have registered in Ontario at your university (append list of their names) _____

    (b) Have all of the above:
        (i) enrolled for credit in degree programs described in their Ontario university's official calendar? __ Yes ___ No
        (ii) been assessed the regular academic fee for their study abroad program/course ? _____ Yes _____ No
        (iii) received instruction abroad paid for by their Ontario university ? _____ Yes _____ No
        (iv) together generated no more formula income for their Ontario university than twice its direct costs _____ Yes _____ No (exclude from grant claim any students with "No" answers, noting which they are on appended list).

    (c) No. of FTE's claimed for formula grants _____
    (d) No. of BIU's claimed for formula grants _____
    (e) 50% of (BIU's x current BIU value of $ _____) = _____
    (f) Man-years of teaching given (based on an Ontario faculty member's normal annual load) by
        (i) Ontario university's regular faculty _____
        (ii) Other faculty specifically retained by Ontario university for program/course _____

    (g) Direct costs of program/course (Formula-eligible expenditures only)

    Teaching (attributable salaries and benefits)
    Other instructional costs
    Physical facilities
    Supplies and equipment
    Other (specify)

Total (equal to 15(e) or greater)

_____
$ _____

_____	_____	_____	_____
Signature, responsible dean (or equivalent)	Date	Enrolment Reporting Officer	Date

POOR

QUALITY

ORIGINAL